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ABSTRACT

Intended as an introduction to the problem of conducting an in-depth examination of speech behavior, this manual is based upon the findings of recent research and on developments in speech analysis. The seven chapters discuss the following: a rationale for evaluating speech habits, the role of listening in the analysis of speech habits, preliminary considerations for analysis, evaluation instruments, means of analyzing speech habits, the reliability of and standards for ratings, and methods for recommending improvement for those with poor speech habits. Appendixes contain a sample rating form, the International Phonetic Alphabet, sample interview questions, and two reading passages phonetically transcribed according to the general American, black, and Chicano dialects. (FI)

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THE ANALYSIS OF SPEECH HABITS

PRINCIPLES, PROCESSES, AND DYNAMICS

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January, 1978

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PREFACE

The Analysis of Speech Habits is intended to introduce the reader to the problems and rubrics of conducting an in-depth examination of the speech behaviors. In this manual, we have taken cognizance of recent developments in speech analyses and the impact of recent research. Numerous sources are listed in the manual that the reader may consult in order to expand his or her knowledge.

Chapter One of the manual presents a rationale for conducting an analysis of speech habits. In the chapter, the reader will find the types of groups for whom an analysis would be helpful and discover the basic underlying assumptions for the remainder of the manual.

Chapter Two explores the role of listening in the analysis of speech habits. All too often texts that emphasize the improvement of a given speaker ignore the fact that in any given communication act, listening skills are necessary to improve speech skills. Therefore the chapter takes a look at the process of listening.

Chapter Three details the analysis of speech habits. Each of the preliminary considerations that an analyst must take into account are listed and explained. Numerous options are also discussed for analysts operating under special circumstances.

Chapter Four delineates the categories that should be included on a rating form for an analysis of speech habits. A brief discussion is given to the various sub-categories that are included under each major category.

Chapter Five explains how an analysis of speech habits may be conducted. The reader will encounter the means by which successful analyses have been conducted in the past, and will discover some of the options that an analyst should weigh while engaged in the analytical process.

Chapter Six describes the way in which analysts may establish reliability for their ratings. The chapter also defines the rating scheme employed in a sample evaluative instrument included in the appendix.

Chapter Seven provides the reader with a beginning means of offering remedial work to those speakers possessing habits that are in need of improvement. Coupled with the bibliography, chapter seven can point analysts in directions toward discovering further available materials.

Beginning analysts should find the appendices most helpful. Included in the appendix section is a sample rating form, the symbols that comprise the International Phonetic Alphabet, along with key words for each of the symbols, sample interview questions, and two reading passages that are phonetically transcribed according to the General American, Black, and Chicano dialects.

The writers wish to thank the many people who reviewed this manual, in particular: Dr. Donna Fox who taught us the difference between disordered and deviated speech; Debra Field and Marie Pittser for their use of the manual in class; our students, and the secretaries and librarians who were patient with our inquiries and frequent changes of mind.

K.J.K
D.S.F.
L.G.W.

CHAPTER ONE: THE RATIONALE FOR EVALUATING SPEECH HABITS

One could list several situations in which a study of speech habits not only has its applications but is also a necessity. Consider a businessman who wishes to determine which of his employees deserves promotion to a position calling for a high amount of public relations work and great skill in oral communication. Similarly, perhaps a university education division wishes to point out those skills that a prospective teacher produces competently and those skills that are in need of further development. Lastly, perhaps a play director must make a judgment as to which person takes a particular role in a dramatic production and his decision is based primarily on the amount of oral communication skills possessed by an individual. In each of these situations, some sort of determination and judgement would be made about the vocal characteristics exhibited by an individual.

All individuals should be concerned with the speech habits they exhibit. We spend as much as seventy percent of our waking hours in some form of communication. Because oral communication is an integral part of the communicative process, the way that we sound to others is not an area that should be taken lightly. While this manual is not written for the expressed purposes of everyone who will need to explore speech habits, the fundamental ideas contained herein should aid those individuals who wish to conduct a thorough and meaningful study of such habits. If you don't have the motivation you need not continue reading.

The Use of this Manual

The present manual is intended to be used by those people interested in many different aspects of speech behavior. Our focus in using this manual has been for instructional and clinical purposes. Our students have found this manual to be comprehensive and complete and helpful in analyzing their own speech habits. The manual has also served to reinforce clinical remediation programs for persons interested in changing their speech habits. In addition to the ways in which we have employed the precepts included in this manual, consider some of the other contexts in which an analysis of speech habits can be performed.

Research. Most experimental research today is conducted with the purpose of making inferences from samples about populations. That is, researchers take a small representative group of a larger body of individuals and attempt to make generalizations about that body based on findings within the small group studied. Clearly, in any functional group operating within society, a large number of different speech habits will be present. For instance, researchers may wish to study the effects of particular speech habits operating within a speech community upon individuals in that community; or perhaps, the attitudes held by individuals outside a speech community about persons possessing certain speech habits within a community. In order for either these effects or attitudes to be studied, an analysis of speech habits is

necessary before research may be conducted.

Education. The education discipline is a rapidly expanding field with numerous innovative techniques designed to produce effective teachers. Despite the progress that has been made in the development of educational teaching techniques, there is still a need for teachers to exhibit an awareness of basic skills. An appreciation for and an exhibition of effective speech is certainly one of the basic skills that a teacher should possess. Just as important however, is the idea that students who possess ineffective speech patterns could very well be members of a particular teacher's class in which the teacher could not identify the defective speech habits. In such a case an analysis of speech habits could prove very useful for both the teacher and the student.

Business. The emphasis of good communication skills in business relationships is increasing constantly. Within the framework of a company's decision-making process, the question of which employee is most likely to create a favorable public relations and interpersonal impression can be answered, in part, through a determination of the type of speech an individual employee exhibits. A company with a promising employee who seems deficient in some performance of speech is more likely to want to aid rather than to discard that individual. To either make a decision of promotion based on communication skills, or to aid an employee to communicate more effectively, an analysis of speech habits would be invaluable.

Tests of Good Speech

When an analysis of speech habits is undertaken, three general tests are applied to each speaker. The components of these tests underlie the specific characteristics that analysts would discover in an examination of speech habits. The basic components of an analysis are voice, speech, articulation, enunciation, pronunciation, and diction, defined as follows:

Voice refers to audible sound that is not necessarily tied to understanding Speech is the process of breaking up voice into audible phonemes, syllables, and words. Articulation is the movement of the tongue, jaw, lips, and soft palate to shape individual phonemes. Enunciation is the blending of the articulated sounds into syllables and/or words. Pronunciation is the choice of particular phonemes to be included in a specific word as well as the choice of syllable to be accented. Diction is defined as the overall process of articulation, enunciation, and pronunciation used to express the exact meaning intended by a speaker.

These terms are applicable to any type of oral communication situation. Because this manual is concerned with analyzing oral speech habits, the analyst may want to make constant use of these definitions during his study.

Test One

Good speech must be easily understood. If a communicative message is worth a speaker's trouble to utter, then it is worth being uttered so that a listener will understand the message. Three basic requisites are important to note as a part of this test. First, the speaker's voice must be of adequate volume and intensity. Speech should be loud enough for a listener to avoid straining to hear the speaker, but not so loud that a listener is uncomfortable. Second, speech must be clearly articulated and enunciated. Good articulation and enunciation is precise and distinct, but must appear effortless in order for the listener to concentrate on what is being said and not how the message is being said. Clear and distinct articulation and enunciation will avoid problems of mumbling and garbling of words and syllables. Third, speech should consist of precise use of words to aid in conveying the thought intended. Semantic problems occur when a speaker means one thing but utters another. If a speaker chooses words that precisely indicate the idea to be expressed, unneeded questions such as "What do you mean?" could be eliminated.

Test Two

Good speech must be unobtrusive. Perhaps the real test under consideration here may be best expressed in the form of a question: given that a particular speaker expresses a particular idea, is the listener able to concentrate on what is being said rather than the way in which it is said? If the answer is no, then a speaker should take a serious look at the manner in which he or she is delivering messages and the impression and effect that delivery has upon receivers. Obtrusiveness can take many forms.

A speaker may be considered obtrusive in terms of vocal production. Consider a teacher's volume in a classroom. A teacher who is giving a full-room lecture needs adequate volume to be heard throughout the classroom. Less volume could cause students to pay less attention to the message which could result in a decreased level of understanding. Likewise, a teacher who is working with small groups in a classroom should be able to be heard only in the group in which he or she is working. To further illustrate a problem with vocal production, a person with a breathy voice quality is considered obtrusive because it is difficult for a listener to discern the words of the message, and also, because the listener must separate the voice quality from the message; a difficult task at best.

A speaker's articulation and pronunication may also be considered obtrusive if sounds are produced in either an over-precise or sloppy manner. Often these manifestations are performed for the mere effect when the speaker consciously desires to be obtrusive. For example, a speaker may be overly precise if he or she wants to "impress" an audience with precise articulation while another speaker may use sloppy articulation to suggest membership within a particular speech community. These manifestations are achieved by intentionally stressing individual sounds and syllables within words or by intentionally slurring or combining sounds and syllables. An example of each of these manifestations should improve the reader's understanding of this concept:

overly-precise: "The school is lovely, is it not?"

[ðiskuəlɪzlʌvlɪɪzɪtnat]

sloppy: "School's lovely ain't 't?"

[skulzlʌvlɪentət]

When these desired impressions are fulfilled, the speech may very well be labeled obtrusive.

Lastly, a speaker may be considered obtrusive if the diction and vocabulary the speaker exhibits calls attention to itself. This can happen if the speaker employs unfamiliar language for a particular listener or if the speaker uses overly-fundamental language that would insult a particular listener. Two examples should clarify this concept for the reader:

unfamiliar: "The epistemological significance of the epidermic hybrosity is rather ubiquitous, isn't it?

fundamental: "That man ain't got nothin' good to say 'bout nobody, ain't 'a right?"

In the first example, the speaker might be considered obtrusive because the language used is unfamiliar to a listener, and the speaker proceeds with zeal to explain the unfamiliar word to the listener. In the second example, the speaker might be considered obtrusive because the language used is colloquial, filled with slang, and blasé. The language itself could easily be considered offensive because it lacks any sense of formality.

Test Three

Good speech must be appropriate. Appropriateness in speech is achieved on different levels, i.e., to the speaker, listener, and occassion. A speaker finds it easiest to exhibit voice and speech characteristics that are appropriate to his or her physiology, sex, euducation, and occupation. Concerning pitch, for example, a male exhibit's a lower habitual pitch level and range than a female. A highly educated person may exhibit a vocabulary and grammar that is representative of his training. A minister would not be expected to use the same sort of language as a company executive. Of course, speech appropriate to the audience is critical.

For appropriate speech, a speaker may also want to take his listener into consideration. In order for a person who is hard of hearing to be able to understand a speaker, some adaptations in rate and volume are necessary. Similarly, a teacher reading a story to children should exhibit a variety of tones and fluctuation in pitch in order to keep their attention. On a content level, a speaker must take his listener into consideration in order not to confuse the listener by using unfamiliar language or that which is offensive.

Finally, a speaker may want to consider the occasion in which communication takes place. The speaker should be aware of the situational requirements and adapt both vocal attributes and content accordingly.

The diverse areas of social situations faced by speakers are received by the speakers in various ways. A speaker reacts in speaking habits to the way he views the situations. In a job interview he may see a formal social setting where he needs to show his best efforts at communication, so he thinks through his answers before he gives them and is very careful with his diction. If he is riding in the car with his girl friend and she asks him the same question the interviewer did he will probably just begin his answer immediately, thinking as he is producing speech and paying little or no attention to his diction. Placing the situations, as received by the speaker on a continuum:

Formal ——+——+——+——+——+—— Informal

the individual also views them as

Impersonal ——+——+——+——+——+—— Personal

and all degrees between the dichotomous terms. Behavioral speech patterns then follow the same continuum.

Extreme Control——+——+——+——+——+—— Casual, Relaxed, Free

The extremecontrol is exhibited in careful choice of words, the speaker's best diction, deliberate syntax and voice control of rate and loudness. At the other extreme, little or no attention is paid to such things. In the formal situation the speaker might say
but using the same sentence in the formal situation it could sound like
It could be said that when a speaker perceives a formal situation he puts on his Sunday clothes, but the informal situation is like doning his old blue jeans.

If speech fails to adhere to the criteria of acceptability as measured by these three tests--intelligibility, unobtrusiveness, and appropriateness--there is an excellent chance that major problems will diminish the success of oral communication. The fundamental concept is clear; in order to be an effective speaker, one must maximize the production of those speech habits which aid the individual toward meeting these tests and minimize the production of those speech habits which hinder the individual from meeting these tests.

Before proceeding further, a definition of exactly what is meant by a speech habit is necessary. Two basic classifications emerge from the literature on speech habits. While the labels vary from text to text, the ideas represented by them are basically the same. Normal speech is defined as speech "which aids the individual to serve effeciently in his role as a social animal." (Palmer, 1977, p. 2). In contrast, defective speech is speech that is "sufficiently different

from that of other individuals in the same environment as to lessen the efficiency of communication and ultimately to disturb the individual possessing such deviant processes." (Palmer, 1977, p. 2) A speech habit is, therefore, any manifestation of normal or defective speech possessed by an individual that is exhibited consistently by that individual. In terms of pitch range, for example, a normal speech habit might be the utilization of a full 1 ½ - 2 octave pitch range, and a defective speech habit might be a pitch range of only six or seven notes. We should note, however, that a speech habit that could be labeled "defective" ranges from a normal deviance to a pathological disorder. The example of pitch range given earlier is an example of a "defect" near the normal end of the continuum, whereas stuttering would be placed toward the pathological end.

A final question is what value is this manual to individuals interested in analyzing speech habits? Two important contributions are contained herein. First, this manual offers an easy-to-follow, step-by-step process of analyzing speech habits that should provide a guide for even a neophyte in the field. The manual is not intended to be a rigid instructional instrument as numerous examples of usage and options for varying situations are included throughout the manual. Second, the writers have included both numerous personal experiences of past analytical efforts of speech habits conducted at the University of Houston as well as recommendations from available literature. It is hoped that the reader will benefit from the coverage of these past experiences, cautions, and rubrics.

Finally, the mere completion and reading of the present manual should not be considered as a guarantee to a successful analysis, study, or research effort any more than completion and reading of the Bible guarantees salvation. The individuals who can take the material contained herein and skillfully ingrain the suggestions and cautions into practice along with their own imagination and perserverence will be the individuals who will benefit from using the manual and for whom the preparation of the manual was intended.

STUDY QUESTIONS

1. What public speakers or speeches have you observed recently that fail to adhere to the three tests of good speech? What effects did the lack of adherence have upon the effectiveness of the speech?

2. Repeat question one this time utilizing "speech" in an interpersonal communicative act in which you have been part of recently.

3. An example of a speech phenomenon was provided in the chapter from both a normal and a defective perspective. Take several other speech behaviors and repeat the descriptive process for each.

4. What types of situations have you been involved in that may have called for an analysis of speech habits? How essential to those circumstances was such an analysis?

CHAPTER TWO: THE ROLE OF LISTENING IN THE ANALYSIS OF SPEECH HABITS

There is little doubt that we spend much of our day receiving information rather than sending information. Some estimate that we spend over 80% of our day listening, reading, and watching the events in our environment; mostly, we observe and listen to other people. (Rankin, 19). Since these "receptive" activities are so pervasive, we have chosen to concentrate on one important activity related directly to communication - receiving information aurally.

We hope to provide you with an understanding of the characteristics of listening, to help you analyze and remediate your own listening behavior, and show how the process of listening affects the communication process. A major emphasis in this section is placed on your habits of listening rather then your capability to physically hear (what we usually think about when one says they have normal hearing). In short, we are placing emphasis on the psychological aspects of "hearing" rather than the mechanisms of hearing.

Before you begin to read this material, turn to the end of the chapter and take the listening test. You will need a friend to administer it. Notice that you may want your friend to change some of the items so that you will receive new questions and not ones you may have read. The questions you design, if new, should be like the ones at the end of the chapter with very slight variations.

What is Listening?

We can start our discussion by stating that listening has occurred when a person receives data aurally. Anytime one hears sounds we can say that listening has occurred. The data to which we refer can take three forms: vocal, verbal, and environmental. Vocal data are such sounds that reflect the quality, pitch, and tone of the voice. Verbal data are sounds that are meaningful to us, as is characteristic of speech sounds that we receive that contain meaningful units. The third data form, environmental, is any other sound that is characteristic of music, noises in the street, or sounds that result from the operation of machinery.

We are mainly concerned with verbal data as input to the listening process. One reason for our choice of specifying the data input is because listening obviously involves a great deal more than hearing vocal and environmental sounds. Hearing is just the reception of sound waves and is not changed by instructing one to hear better. If one has impaired hearing the remediation process is usually one for medical attention and is not changed through classroom instruction. For our purposes, we are interested in how the individual takes verbal data and processes the data to understand messages sent by others. Our focus is on the communication process and how listening plays a part in that process.

To help organize our discussion, we will refer to three levels of listening. The levels differ according to their functions and extent to which we can distort auditory data because of psychological biases, misperception of sounds, and individual differences.

Figure 2.1 shows the three levels of listening; hearing, tuning, and auding. Hearing is the capacity one has for receiving sound. You can find out about your hearing by taking a hearing test that measures the extent to which you can receive different sound data. Tuning is a level that uses your own habits of listening, and when you use your ability to discriminate between sound configurations and your comprehension of verbal data. The third level, auding, is tied primarily to your attribution of meaning to the sounds you hear. This third level is one at which you evaluate the sounds, categorize them and then formulate a means for remembering what you heard. You also begin to formulate your response to the message at this third level. It is this third level that is most susceptible to change through instruction.

One should remember a few things about the three levels. First, the separation of the levels is for convenience of discussion and is useful only as a framework from which to work. We do not intend to say that the levels are identifiable separate from one another in every listening encounter. These levels are also arranged in a series of stages where one must complete adequately one level before the other levels can function. For example, the selection from verbal data must occur in such a way that the information can be structured. If the material is incorrectly structured then the evaluative process is faulty.

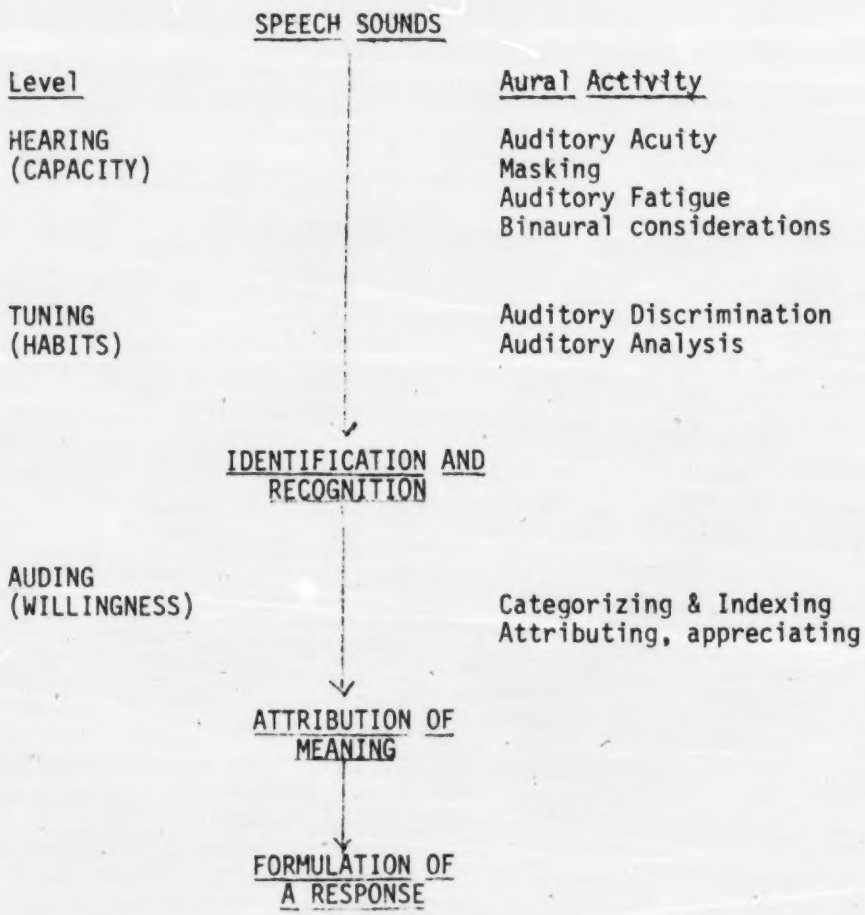
The stages of listening are also listed in progressive difficulty. While hearing may come naturally to most people it is not likely that the other levels are developed without training and cognitive maturity. The hearing level is determined by the capacity of the person to hear. The tuning level is most influenced by one's habits toward listening. (What one person does with the reception of aural information may be different from another person.) The auding level is influenced by one's willingness to participate in the information.

The most likely model of the listening process is the one represented in Figure 2.1. Assume that a person receives speech sounds which begins the listening process. Other processes impinge on the listening process but the main components of interest to us are listed in the Figure. For example, one main skill not mentioned here is the extent to which a person can take the perspective of the other in order to listen more carefully.

Now we turn more specifically to the three levels of listening and explore some implications for certain contexts. Note that we have placed a major emphasis on your ability to increase your listening skills. We have also included a great deal of detail here since this information will be useful to you as you evaluate your student's listening.

TABLE 2.1

The Listening Process
Levels of Aural Behavior



Hearing

While the hearing process is not understood fully, speech pathologists know a great deal about the way the human ear receives information. The way in which hearing is measured is by an audiometer which records a person's ability to hear across the entire speech-frequency range. A person with "normal" hearing is one who can respond to various frequencies (tones) at various intensities (levels of loudness). If a person requires more than the normal amount of volume to hear sounds at certain frequencies, then he or she is most likely exhibiting a hearing loss.

Human speech comprises frequencies from 125 to 8000 Hertz (Hz), Hertz is an accepted international scientific word for cycles per second named after a 19th century German physicist who proved the existence of electromagnetic waves. The most critical frequencies for listening to speech lie in the range between 1000 to 2500 Hertz, because the majority of word cues are within this range. Frequencies above 2500 Hertz contribute to the finesse with which we can hear sounds as /b/, /d/, /f/, /g/, /s/, /t/, /h/, / /, /θ/, and /Z/.

A useful concept for discussing the hearing mechanism is that of hearing sensitivity or the responsiveness of hearing to stimulation. The way in which one responds to sound data is probably the best way to analyze this sensitivity. Different people have different sensitivities as do different animals. Also, animals and humans have very different sensitivities from one another. Dogs and bats hear sounds of higher pitch or frequency than humans since the average frequency range for the human ear is 20 to 20,000 Hz, while the frequency range for bats is between 80,000 to 120,000 Hz. Therefore, animals such as bats are literally on different wave lengths from humans.

The human ear is also differentially responsive to tones produced at different frequencies. Researchers have determined that the most sensitive frequency for the human ear is about 1000 Hz, meaning that a tone produced at this frequency can be heard at less intensity than other frequencies. As frequency increases or decreases from 1000 Hz, acoustic signals must be increased in intensity in order to be audible.

The study of hearing is also concerned with the loudness of sounds that enter the ear. The decibel is a unit of measuring the difference between the perceived intensity or loudness of certain sounds and that of a standard sound. The range of intensity used by the human ear ranges from 0 to 130 decibel level.

Sometimes we become exposed to high decibel levels and suffer from auditory fatigue. This type of fatigue is a hearing loss due to continuous or repeated exposure to sounds of certain frequencies and levels. A monotonous tone or droning voice will cause auditory fatigue as will constant exposure to loud music or cars in tunnels. Sometimes the loss of hearing is reversible; in other, more extreme cases, the

hearing loss is permanent. Notice that risk to hearing is influenced by three primary factors associated with the sound data--the intensity. frequency, and duration of the sound. Hearing losses caused by damage or destruction to the outer and middle ear can be repaired surgically. Damage or destruction to the inner ear can often be remedied by surgery. That which cannot be repaired in the inner ear, plus nerve impairment, can be helped in most cases by competent professionals. Great progress has been made in recent years with the use of microsurgery. Table 2.2 shows the different thresholds of hearing and the effects of hearing loss at each level.

While there is advanced technology for measuring a person's hearing ability, and even failures to perform basic hearing functions it is possible to make some assessments of a person's hearing without sophisticated equipment. Sometimes a child is diagnosed as learning disabled where the problem is a loss of hearing. This mistake may be avoided by understanding certain hearing loss symptoms. On an informal basis, we can use certain questions that may help to analyze a person's hearing ability. Some of the questions are as follows:

1. Do you appear to be straining to push closer to the speaker?
2. Do you speak very loudly or very softly?
3. Do you have difficulty following simple directions?
4. Do you turn up the sound of the record player or tape recorder?
5. Do you have difficulty pronouncing words or being understood?
6. Do you get confused easily where there are competing noises other than conversation?
7. Do you sit near the front of a room for the purpose of hearing better?

Tuning

The second level in the listening process is called tuning, or the process in which one identifies and recognizes verbal data. There are two important operations that occur at this level; auditory discrimination, which is the ability to discriminate between sounds, and auditory analysis, which is the ability to combine sounds so that they are meaningful units. These processes are constantly at work and are influential in an individual's recognition of the sounds heard.

The recognition of speech as speech is a very easily performed operation for the human. We can process speech at a much faster rate than we can nonspeech sounds. We can usually take in about 30 phonemes per second but we cannot discriminate 30 nonspeech units in the same one second interval. We can recognize speech under very poor conditions; the speech waveform may be distorted, mixed with noise, fragmented, and be, in general, a very poor representation of the sounds actually spoken by the talker. Yet, we can still understand what was said. This ability to understand distorted speech has led theorists to believe that we do not just receive information but we act upon it. That is, we tend to provide structure to the speech so that we can understand it.

One question frequently posed is how do we accomplish this speech recognition? While the answer is clearly not simple, there are at least four ways we accomplish recognition. First, it seems as if we

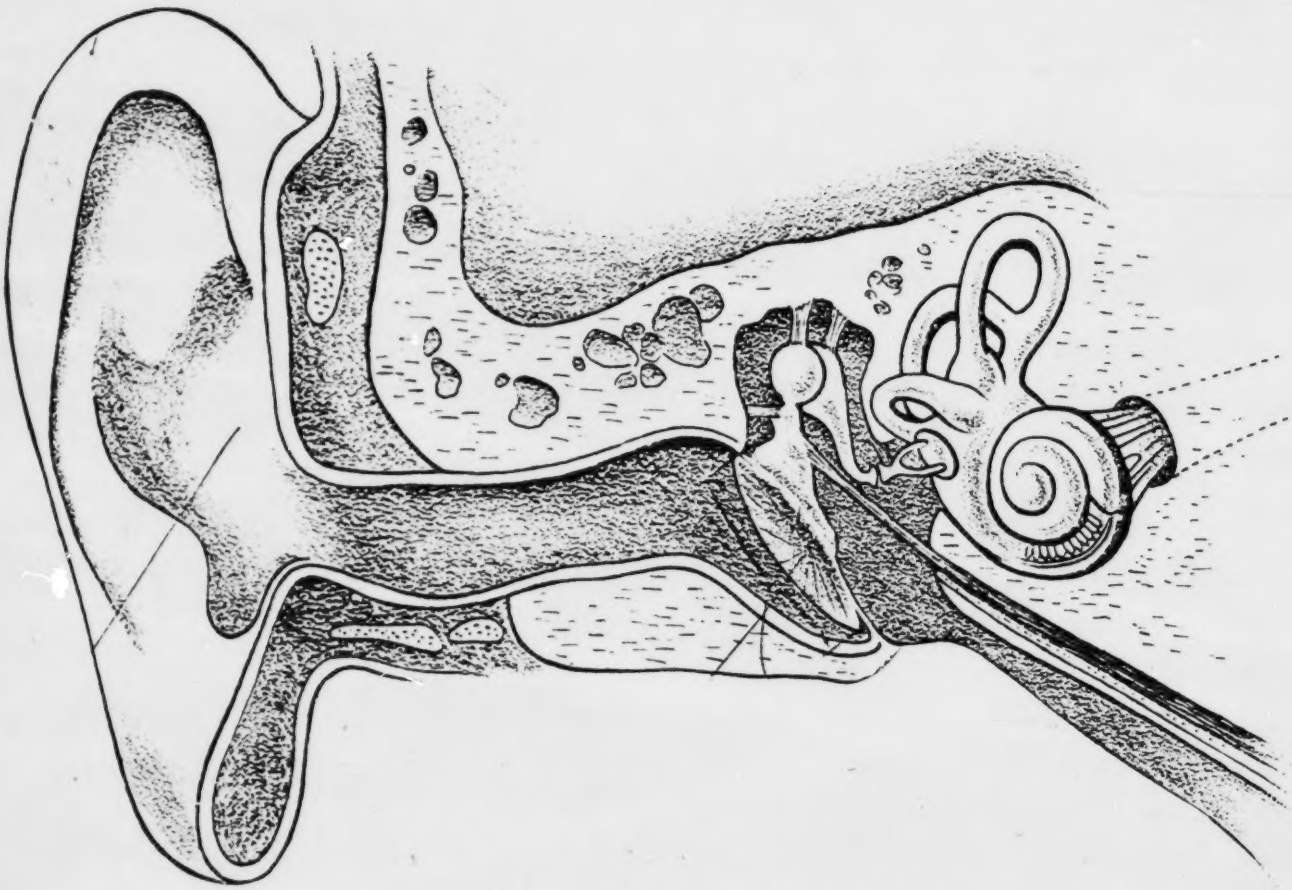


Fig. 2.1

Table 2.2
Thresholds for Hearing*

THRESHOLDS IN BETTER EAR**	CLASSIFICATION	EXPECTED PROBLEMS AND NEEDS
0-25 dB	Functionally normal	People near the bottom of this range have occasional difficulty understanding faint speech or speech in noise. However, they ordinarily do not feel they have a hearing loss.
26-40 dB	Slight Loss	If the loss is congenital, language and speech development are a little slower than normal. In school, the child needs preferential seating as do all children with hearing loss. Additional help with language arts may be required. There is a little difficulty with faint or distant speech, but discrimination is good to excellent. Trouble understanding in noise may be reported. Depending on how critical demands on listening are, part-time hearing-aid use may be needed as loss approaches 40 dB.
41-55 dB	Mild Loss	Mild congenital loss causes significant delay of language and speech. Language instruction is needed. Articulation problems are likely. People with mild loss understand normal conversation in closeup, one-to-one situations, but miss a lot in class or groups. Auditory discrimination is good; but deteriorates in noise; the person may get along better without an aid in some noisy places. Speech-reading instruction may be helpful.
56-70 dB	Moderate loss	Moderate congenital loss causes severe retardation of language and speech development, unless special training is provided. Children need preschool training, and most will need to start school in special classes for the hard of hearing. They may move to regular classes later, at least for some subjects. Alternatively, children may attend regular classes and receive additional individual tutoring as needed. Severe articulation problems are likely. Voice disorders may be present. If loss is acquired, there may be some deterioration of language and speech for this and subsequent classifications (Penn, 1955). Essentially full-time hearing-aid use is indicated, with substantial benefit, since discrimination is expected to be fairly good. Speech-reading is necessary to supplement hearing.

Table 2.2(cont)

THRESHOLDS IN BETTER EAR	CLASSIFICATION	EXPECTED PROBLEMS AND NEEDS
71-90 dB	Severe Loss	Severe congenital loss causes delay in learning consistent responses to audible sounds. Only rudimentary language and speech develop without special training. Children need preschool training and special-class placement, but may eventually attend regular class, at least for some subjects. Full-time hearing-aid use is needed. The aid makes speech audible, but poor auditory discrimination may limit its effectiveness. With training, the use of hearing and vision may permit reasonably effective communication.
91 + dB	Profound Loss	Congenital profound loss prevents learning consistent response to sound or development of language and speech without special training. Children should be in full-time education[illegible] programs for the deaf. Those who have hearing in the upper part of this class, and auditory responses across the speech range, may use a hearing aid to supplement visual clues for speech. Those with fragmented audiograms and no response for frequencies higher than 500 or 1000 Hz receive only gross auditory cues and have extremely poor auditory discrimination.

*From

**Thresholds are in dB according to 1964 ISO (International Standards Organization) standards, based on sensitivity in better ear (pure tone averages across the speech range or speech-reception thresholds).

use the speech patterns of the speaker to provide us with clues about the speaker's words. We always do better at understanding speech after we have listened to the speaker for awhile because we are more familiar with the patterns of the speech of that speaker. One implication of this fact is that we tend to change the way we perceive speech according to whom is speaking. Of course, some people can make this change more easily than can others.

A second way we recognize speech is through the use of grammatical rules. We use the grammar of language to help fill-in gaps. We do well at understanding speech when the number of possible words is limited, but adding grammatical constraints improves our performance even more. For example, can you guess what words belong in the blank?

Hello, how are _____?

There are very few words that can fit into that space. We can say "you" would fit, but there are other possibilities such as "they," or the placement of peoples' names, such as "John and Mary." We know that the word or words must be nouns and that they are likely to be a person or persons. Our expectations about language, the rules of grammar, and the limited amount of possible choices all aid our decision about what should go into the blank.

Another way we can recognize speech patterns is by being able to control the way we take in information. We do not recognize speech at the same time we hear it. We tend to delay the decoding process a little while so that we can get more information about the speech signals.

Still a final way we recognize speech is by the use of other channels of communication. The reception of speech is aided by the nonverbal cues that are available in the environment. We may look at the angry face of the other person while in an argument. The speech produced is much more easily understood because of the nonverbal cues. One thing you can try is to talk with someone and change the expected nonverbal cues. It is highly likely that when the verbal and nonverbal messages conflict your speech is much more difficult to understand. The speech perception mechanisms we use in every day encounters rely heavily on the perceptual cues available to us in our environment.

In sum, the tuning level of listening involves a number of operations helpful to speech recognition. As we recognize speech there is a further process that becomes important, which is, making meaning out of the information we receive aurally. The next level of listening, auding, is the level at which we make sense out of all incoming aural stimuli.

Auding

This third level of aural responsiveness entails many important processes. This third level is also the only level of listening that is entirely learned and therefore, susceptible to instruction.

We use our auding ability to assimilate the spoken message in order to understand and remember what was said. One major process that ideas at this level of listening is one of comparison. One searches his or her memory to find where the auditory stimulus fits. Once a place is found to store the stimulus or provide connections for the stimulus we become aware of the meaning of the message.

The human organism ascribes meaning to input data by assigning the data to categories; then the data assumes the meaning of the category. For example, if someone gives you a description such as "a wet nose, walks on all fours, is a pet, and barks," the message has no meaning to you until you place it in the category "dog." After choosing this category the description assumes the meaning you have placed on that category based on your past experiences. You may think of this description as being "collie," another may think of it as "poodle" yet the sender may have been thinking of "bulldog."

The above description is somewhat simple and does not require much time or thought to categorize, yet many messages are much more complex and require more tim e for the listener to give meaning to them. As the listener works to place the message in a category the talker continues to talk. Sometimes we lose part of the message because we cannot fit the auditory stimulus with a category. Other times there is too much information to process at once. (I am sure a cognitive psychologist would have fits about the description above - but then again, they haven't described the process of meaning in much more detail).

We also use another method, using multiple communication channels that are available to us. The listener increases his or her capacity by watching the mannerisms of the speaker and listening for the meaning in his voice. Seeing and hearing complement each other very easily.

Coping with information overload is an important aspect of being an effective listener. In the TRY THIS Exercise see how many different ways you can list in order to help yourself deal with information overload. Don't forget that you, as listener, can take active part in the communication process. In your list of coping strategies think also of ways you can help the speaker with his message delivery.

One idea that is obvious from our discussion of speech recognition on the tuning level and the ways we handle information overload on the auding level is that we cannot take in all available auditory information. We adapt by selectively processing what we think are important stimulu for understanding messages. To become a better listener we need to pay close attention to the ways in which the selection process occurs. To that end, two important sources of stimulus can be isolated for discussion. These sources are your biases and the willingness with which you listen.

There is little doubt that everyone has biases. We all think differently, like different foods, people, books, and courses in school. These biases also cause us to listen in different ways from another person. For example, we usually do not like to listen to a message which we do not agree with. Regardless of the content of

of the message, if you disagree with a person you will hear that message differently, from another who is in agreement. Take an issue such as abortion. How do you feel when you listen to an opinion different from yours? Do you usually remember as much of the dissenting opinion as you do of an opinion in agreement with yours?

Biases cause people to alter incoming data and to make premature evaluations about what one hears. Alteration of the data is done to fit in with our needs and wishes as opposed to logically following the message. Making premature evaluations is a human tendency. A good listener recognizes this tendency and attempts to recognize his or her biases. Shortly, we will suggest specific skills one may want to develop in order to recognize these biases.

Finally, another important aspect of listening is the importance you place on the process of receiving information aurally and the willingness with which you approach a particular situation. If you are not willing to actively seek information and participate in the communication encounter, it is not likely you will listen effectively.

Critical Auding

Much of what we have said so far may increase your awareness of listening but will not change your behavior to any significant degree. In this section we will try to give you some ideas about how to increase your listening capacity and your ability to process aural information.

Critical auding describes best the process of listening skillfully. As you recall, the auding level is totally susceptible to training and can be changed according to information you learn about yourself. We will define critical auding as the process of examining spoken materials in light of related, objective evidence for the purpose of formulating ideas and future actions. The major focus of our analysis is on the content of the spoken message, often including assessments of the speaker, as well. Critical listening is the most title used for what we have described above, but we are choosing to remain within the framework we have devised in order to suggest that this activity occurs at our third level of listening.

Keep one idea in mind as you read this material: critical does not necessarily involve negative overtones. Think about the following statement from Sam Ducker:

> A good listener certainly 'considers his audience' when he evaluates the worth of what he is listening to. He wants to know whether the speaker brings a background of knowledge to his subject, whether the speaker has some motive in asking action from his audience, whether the speaker is presenting the views he does, not as an individual, but as a representative of some group. All these things affect the judgment that the good critical listener makes. (p. 264)

While discussing skills of listening we need to make a distinction between support skills that are not directly related to the process but aid within it, and direct skills which are associated with the actual process of listening. For example, support skills are those of memory and facility with language while direct skills are preparing for the communication situation and active structuring of messages.

The ability to remember information is important to many human behaviors - the more able we are to facile we seem to be to process information rapidly and clearly. To aid your memory you naturally form categories in which you place information and devise some tricks of processing information. These tricks, or what psychologist call mnemonics (pronounded: new-mon-ics), are used naturally and can be learned rapidly. For example, consider how you remember a phone number. You may rehearse it verbally by repeating it many times or you may associate it with something familiar to you.

At the end of this chapter there is a brief article on various mnemonics you may want to try to develop. While these tricks are no guarantee to better listening our students have found them invaluable in gaining more skill at processing information when received aurally. Try some of the tricks and practice them - do they make a difference?

Another support skill is the facility you have with language. You have heard it all before - reading, writing, vocabulary, and speech are important to your development. We can only reinforce these statements within the present context and make one additional comment. In some of the research we have completed on the relationship between skills of listening and reading we have found that there is a strong positive correlation between reading ability and listening ability. This relationship states that the better you are at reading and remembering what you have read, the more able you are to listen effectively. This relationship does not state that if you increase your listening ability you will also increase your reading ability, or vice versa. We do believe, however, that the two are closely related in that they share common language skills. Understanding the basics of your langugage is obviously important to understanding the information you receive. If you find that listening is a problem for you, consider the possibility that there may be skills you lack in your language and ability to read and write language.

We can be more specific about the important listening skills. While we list many ideas below, the major factor that we find in good listening (critical auding) is the ability to differentiate between facts and opinions. We can all recall an instance of an attempted deception from advertising where we were told to buy a product "because it had 50% more nutrition." As we analyze the information to which we listen it is clear that many ideas we take as fact are really someone's opinion or persuasive appeal. A "good" listener is able to separate fact from opinion and be able to act on the messages accordingly.

Earlier in this chapter we mentioned two other means of increasing your skills with listening. We gave you some information on how you recognize verbal data and also about how you handle information overload. Refer to those sections for some additional ideas.

Read the following list of suggestions and then consider the following questions for yourself: (1) Which factors are most important for you? and (2) If you could work on one factor, which would it be? After you have finished reading the list below and have answered the questions we just cited, turn to the TRY THIS exercise at the end of this section.

As you listen or prepare to listen, consider the following ideas:

1. Use a criteria as you listen. Develop a means by which you can compare the message content and facts. Look for well supported ideas and relevant facts. Try to recognize the "hard sell" as opposed to the "truely committed." For the students in your class, provide a framework by which they can evaluate the information they receive each day. For example, one teacher was discussing with her fifth grade class the effects of advertising on people's consumer behavior. She gave the class a list of ways advertisers most frequently try to persuade the consumer to buy their product. She then asked the students to evaluate T.V. commercials based upon the criteria. When the students returned to class the next day they were amazed about how much they had missed initially.

2. Try to determine the biases, prejudicies, and qualifications of the speaker. However, it seems as if poor listeners judge the speaker's physical appearance, dress, delivery, or other possible idiosyncrasies rather than what was said - be careful of confusing what was said with whom said it and how.

3. Evaluate the devices used by the speaker, such as (a) self contradictions, (b) hasty or false generalizations, and (c) failure to present all choices or facts.

4. Prepare for the situation before and during it. Good listeners tend to concentrate on central issues and general concepts in relation to specific facts. They are flexible notetakers and actively manipulate the information received to more fully understand it. They try to avoid listening distractions and look at the listening situation as a challenge rather than as a bother. All of these considerations involve preparation before the situation by anticipating events that may occur; during the event by being able to adapt to changes and new information.

5. Try to engage yourself in a process of listening so that you are actively structuring the message for your understanding. Anticipate what will be siad, compare what is said with your anticipation, evaluate the information, review it for emotional or biased words, etc., and then summarize it for yourself.

6. Probably the most important factor other than separating facts from opinions is to be willing to listen in an active and meaningful manner. If you don't care about listening then you will probably not be a good listener.

As a final check, consider the following questions about your listening:

As a listener, do you:

1. Look for areas of interest?
2. Judge content?
3. Withhold judgment until comprehension is complete?
4. Listen for central ideas separating out emotional and biased ideas.
5. Utilize flexible systems of remembering, notetaking, and processing of information?
6. Minimize distractions?
7. Participate actively in the listening situation by using the anticipation-summarization process?
8. Listen willingly?

STUDY QUESTIONS

1. Listen to people who are "easy to understand" and some who are difficult to understand. Try to figure out why there is a difference. Listen to people on television. What people are "easy to understand?" Why?

2. List the ways in which you, as a listener, can cope with information overload. List the contexts in which information overload is likely to occur for you. Compare your list with another class member.

3. Send five people out of the room (group 1). Tell the remaining group (group 2) a story that lasts approximately one minute. Then have one person from group 1 return to the room and have a member of group 2 tell the story to that person. Have another member of group 1 return to the room and have the first member of group 1 tell this person the story. Repeat the process until all five members of group 1 have returned to the room. What happened? How different were the versions of the stories? Speculate as to why distortions may have occurred.

4. Listen to a message as it is delivered in one of your classes. As you listen, begin to record your observations according to the following questions: who said....? How does that person know? what support or evidence is provided? what motives does the speaker have? what type of facts are provided? are the facts accurate and meaningful? why does the speaker hold such opinions.

CHAPTER THREE: PRELIMINARY CONSIDERATIONS FOR AN ANALYSIS

One of the most important decision in analyzing speech habits concerns the type of environment in which an individual's voice is to be evaluated. Probably no one would be so naive as to suggest that the methods of gathering the voice have no effect upon the analysis. For example, if an individual is tape-recorded within an uncomfortable atmosphere, one would expect that there would be certain vocal characteristics exhibited which are unique to the recording situation and atypical of that individual's normal vocal patterns. Also, if the equipment that is used is not capable of accurately reproducing the voice, a similar erroneous analysis is likely to result. Unless care is taken to assure that an individual being analyzed is comfortable and being recorded under normal conditions with good recording equipment, the analysis could be a fallacious and misleading one. These cautions are given under the presumption that it is desirable to determine how a particular person sounds normally, not how that person sounds under a given set of circumstances.

There are two general areas that must be taken into consideration by those analyzing speech habits. These areas are the manner in which an individual's voice will be stored for analysis and the environment from which that individual's speech will be taken. This chapter will consider both of these areas, and explore advantages and disadvantages of each.

Manner of Storing the Voice

Three possibilities come to mind when outlining methods for storing an individual's voice. The method selected will vary with the purpose, resources, and facilities available for the analysis. The three methods are spontaneous rating techniques, audio-tape recordings, and video tape recordings.

Spontaneous Rating Techniques

The spontaneous rating method is the least favorable of the three options. It involves the rating of speech habits as they are encountered and no recording is made of the speech. If only limited funds and a highly competent person is available the method of spontaneous rating is feasible. This method works best through an interview format. The analyst has control of the communication under study and has the opportunity both to make notes and rate the speaker during the course of the observed communication. In other words, the same person who might interview a speaker would also analyze and evaluate the speaker. Under this method, the speaker's voice would not be stored in any way for repeated analysis. The interviewer would simply record his observations on a prepared form and then place an evaluative rating on each of the observations made.

Several disadvantages to this option are worth mentioning. First, the interviewer must be both a highly credible and accurate examiner, analyst and evaluator. If he is wrong, it is impossible to determine

the amount of error made. It is possible to check the accuracy of the remarks made and evaluative ratings assigned if a subject were re-interviewed, rated, and evaluated by a panel. Of course, these options would destroy the overall purpose of using the spontaneous method, particularly in terms of expediency and additional finances, as well as inducing possible anxiety upon the speaker due to the presence of a group.

Because the ratings are spontaneous, the voice of the speakers are not stored, and therefore an outsider is not privy to more information than the comments made by the interviewer in written form. Therefore, unless a panel is used, it is simply not possible to either challenge or confirm the ratings given.

Another major consideration that must be made in employing the spontaneous rating method concerns the biases of the rater due to his or her training, experience, and interests. For example, a rater trained in drama may hear more voice projection than a rater trained in music, who may concentrate more on the quality of the tones.

Because, too, the rater sets the tone for the interview at his level of comfort, he may not view the situation as does the interviewee. The rater may feel he has set an informal tone, but the interviewer may see it as formal. With no record of the interview but the rater's perception, the ratings may be innaccurate if perceptions of the event differ.

Lastly, the entire process of study is greatly slowed by the employment of the spontaneous rating method. Under this option, it is not possible to employ a large number of interviewers simply for the sake of obtaining voice samples. Hence, those conducting the analysis must balance and trade-off the advantage of conducting their analysis swiftly with the disadvantage of a decreasing confidence and accuracy.

Audio-Tape Recordings

The audio-tape method of gathering voice samples of speakers lends itself well to the type of in-depth analysis suggested here. (Reliability will be discussed in detail in Chapter 6). Unlike spontaneous ratings, the use of an audio-tape recorder allows analysts to use a number of individuals who are not necessarily skilled in voice analysis and evaluation to gather voice samples. Several distinct advantages to the use of audio-tape recordings are as follows: First, an audio-tape recorder can be used in any type of communicative situation and environment and the quality of the recording is usually unaffected by the physical surroundings in which it is put to use. Second, analysts can obtain audio-tape equipment and its accessories at a relatively low cost. Third, the equipment can be operated at maximum efficiency with a minimum of mechanical expertise and training.

While the three advantages listed above outweigh any possible drawbacks, there are situations in which the audio-tape recorder does not entirely fulfill the needs that it is supposed to serve. The major disadvantage to its use is its inability to record non-verbal phenomena that accompany oral speech, as improper opening of the mouth, facial

movements, and gestures. With an audio-tape recording, analysts could only speculate about non-verbal phenomena. Therefore, the non-verbal aspect of the analysis is lost if the observer of the recorded communication (such as an interviewer) did not make a detailed notation of physical attributes. Even if such notations were made, with an audio-tape recording, they cannot be verified.

Video-Tape Recordings

The video-tape recording is by far the most expensive and complete of the two options for storing the voice. Advantages and disadvantages should be weighed before such a substantial investment is made. The major advantage to the video-tape recording is that it performs all of the duties discussed under the audio-tape recording, while nullifying the problem of unrecorded physical manifestations. Analysts will be able to determine physical actions occurring in the communicative act and have the opportunity to correlate these with particular oral speech habits. This added advantage would seem to be the major reason that analysts would pursue this particular method of storing the voice.

There are several disadvantages to using a video-tape system, the severity of which depends upon the resources that are available to the analysts. Several key problems might be: First, the video-tape recorder usually requires special facilities in terms of room size, lighting, and other special considerations that may inhibit or restrict the type of communication the analysts wish to store. It would be rather difficult to record an impromptu conversation between individuals while hiding the fact that the communication is being recorded, simply because the video-tape recording usually requires a camera operator, flood lights, and monitors.

Second, the cost of attaining and maintaining equipment is high. At this writing, the money needed to obtain a complete video-tape system is hardly a figure that low-budget institutions could afford for the sole purpose of conducting the analysis described in this manual. However, in some locales, it may be possible for analysts to rent or borrow the equipment. Third, some training and expertise in the operating and maintenance of the video-tape system is necessary to obtain truly optimum recordings. Obviously, analysts could not expect a quality recording from a person who has never operated a video camera. Another major drawback to the video method is the phenomena of stage fright or camera fright. Few speakers have enough experience before a camera to produce a comfortable perception of the interview setting. The camera is more likely to bring on the "nervous" behaviors that demonstrate tense, uneasy, abnormal communication patterns.

Of these three options, the spontaneous rating technique, the audio-tape recording, and the video-tape recording, it appears that the audio recording is the most feasible for the purposes of general analysis. It is not conceivable that a group would wish to pursue an analysis in this area if the voice were not stored in some way, nor is it conceivable that many analysts would be agreeable to the high cost of purchasing video-tape equipment simply for the purpose of conducting an analysis.

Communicative Environment for Storing the Voice

Merely deciding upon the way in which the voice will be stored is not sufficient to begin conducting the process of gathering sample voices from speakers. One must also define the type of communication that will be recorded and maintain quality and consistency in whatever route is chosen. Five possibilities are discussed below. Unlike the choices made for methodology of storing the voice, the options selected below are often a matter of personal preference. Yet, there are certain advantages and disadvantages to the options that should be considered before choosing one particular method.

Artifical Conversation

In an artificial conversation, one would have either one speaker paired with an analyst or several speakers paired together, and have the speakers discuss either a pre-determined subject or any arbitrary subject that may come to mind. As the title of the method implies, the conversation is very artificial ("talking for talk's sake") and one cannot always be certain that the speaker's speech habits that are being recorded are the habits that are usually exhibited by the speaker.

Possible topic areas for artificial conversation might include such subjects as the weather, Monday night's football game, world affairs, or even grandchildren. The main criteria to use in selecting a topic is to make the communication climate supportive of the conversation.

The one advantage that the artificial conversation seems to hold over an interview format is that the speaker is not necessarily forced to reveal any personal information or any personal philosophies that he may be reluctant to relate. Rather, an apersonal topic is applicable and can be used in this method very well.

Candid Conversation

With candid conversation, analysts would have to be able to record speech that was not pre-planned or arranged in any way. Candid conversation places the speaker in a more natural communication environment than the other methods. However, the major disadvantage of using candid conversation is the amount of time that it may take to "catch" the speakers in a natural state and arrange for the talk to be recorded for later analysis. One possibility would be to record the proceedings of a classroom but even then, it would be very difficult for the analysts to wade through the myriad number of voices and isolate one particular speaker for study.

Another disadvantage to candid conversation that emanates from a group is that the speech sample may include habits that are unique to the large group setting. Analysts could only speculate as to whether those same habits would be prevalent in a dyadic situation.

Self-Recording

The use of an individual recording his own voice is probably the simplest for analysts to employ in a study of speech habits. It also presents the most problems. This method is the least time consuming of all, since an analyst does not have to participate in the process of gathering the sample voices of the speakers. The individual speakers could simply record their own voices, either at home or on equipment provided by analysts.

There are several problems that could ensue from such a process. First, the variability in recording equipment could cause unintelligibility of the voice recorded. Not all recording equipment will record voices with the same quality, and when the equipment is mixed (as is highly probable), it may be necessary for many of the voices to be re-recorded at a time-consuming loss for the analysts. Second, there is no guarantee that an adequate amount of voice will be recorded for analysis. Because the analyst may not have necessarily set any minimum amount of time for recording, there may not be enough diverse voice samples for a proper analysis. Lastly, there is no guarantee that the recording would be made under natural settings. One way to alleviate the unnatural problem would be to have the individual balance his time between conversational speaking and a pre-planned reading passage provided by the analyst. However, there are no guarantees that the speaker will do as requested, inasmuch as there are not any controls placed on the recording situation.

Interview

The most desirable method of obtaining voice samples is through the interview method. This is because the speaker is placed in a more natural communicative environment than a self-recording or artificial conversation. An interview would be accomplished by having an analyst individually work with each speaker by employing a question and answer format. There are checks from the analyst built into the communication for purposes of time and the amount of voice that will be recorded. The major drawback to the interview method is that it is very time consuming if a large number of speakers are to be included in the analysis. However, as mentioned earlier, if the interview is tape-recorded, it is possible for the analysts to employ persons to interview speakers only, meaning that they need not be qualified or proficient in vocal analysis or evaluation techniques.

Reading

The last option is one in which speakers read passages prepared by the analysts for evaluation. A number of outstanding texts in the field of speech express the idea that the ability to read orally is of equal value to the ability to communicate extemporaneously. The major advantage to this method is that the reading passage will be standardized for all speakers. If for example, it is known that a certain population of speakers drop final plosive sounds, then it is certainly to the analysts advantage to examine the speakers oral communication in a context that includes a number of plosive sounds in the final position. A selection of a reading passage that includes a sufficient number of such sounds can only help to improve the quality of the analysis undertaken.

The major disadvantage to the use of reading is that the goal of attaining communication under a natural environment is lost. Few would disagree that the voice is used differently when reading than when thinking aloud or orally expressing a particular point extemporaneously. Hence, the analysis, if done only from a reading sample, may lose some of its validity.

Realistically speaking, the writers feel very strongly that the interview and reading type format is the best for beginning analysts. Despite the fact that the method is time-consuming, it is easy to obtain help in gathering voice samples from speakers. The interview preserves a natural setting for communication and includes controls both in the amount of time for the communication and the amount of voice that is exhibited. The interview lends itself very easily to either the video-tape or the audio-tape recording. Furthermore, the interview allows the entrance of a personal touch towards the speaker. The inclusion of certain questions in an interview can make a person feel that the analyst is interested in him or her as a person and not just as a possible subject for extensive wide-reaching analytical purposes.

The remainder of this chapter will consider the combination of an interview and a reading of prepared passages as the focus for a vocal analysis. Several important considerations will be given in the preparation and execution of each stage in the process.

Preparing the Interview

The preparation of an interview is a complex, time-consuming process. Careful steps must be taken to assure that a reasonable chance of success for the analysis can be expected. One must always weigh the possible consequences of a particular action in minute detail. While not all of the recommendations below can be or have been empirically verified, several principles learned through personal experience and available literature are included here.

Physical Setting

A multitude of considerations come into play when determining the proper physical considerations for an interview. The analysts should create an atmosphere that is comfortable and conducive to effective communication while maintaining focus on the interview.

The first consideration will be the room chosen in which the interview is conducted. It will be assumed (though not mandated) that the interview is audio-tape recorded. Therefore, it is necessary that the tape recorder be placed in a position where an optimum recording will result. Considerations of recorders will be made later in this section. The room chosen should be large enough that the speaker will not feel cramped, yet too large a room could provide distractions that might take away some of the impact of the interview. The chairs used should be comfortable ones; preferably of the padded variety, if they are available. Chairs that rock should be avoided, as these may cause the speaker to move away from the recorder. You may want to remove

physical distractions such as extra chairs, paintings, books, or other items if they hamper the performance of the individual. A room can be comfortable for the speaker without being "homey."

The room should be sufficiently lighted, particularly if a reading section is to be included in the analysis undertaken. Artificial light is recommended for two reasons. First, it is reliable. There is only a very small chance that artificial light would ever fluctuate, and even in those cases, the situation can be easily remedied. Secondly, large windows would only serve to distract the speaker from the intended purpose of recording communication. While these points may seem obvious, many times these lighting factors are overlooked.

The chairs should be set with a reasonable distance between the interviewer and respondent, such as 6 to 8 feet. Individuals should face each other with the tape recorder placed on a table between them. Surely, successful interviews have been conducted with both the interviewer and interviewee on the same side of each other with the recorder either in front of them or behind them. One way to test the effect of distance upon the recording level is to have both the interviewer and respondent count to a predetermined number and then play back that segment of counting before the interview begins.

The selection of a tape recorder is a very important one. Popular designs available today include condenser microphones that are capable of clearly picking up voices in very large rooms. Such recorders may be purchased for as little as sixty dollars. Other recorders offer convenient optional items that are of more use in the analysis of an individual's voice than in the actual taping. Some of these features include tone settings, meters for measuring volume, cue locaters, and power indicators. Depending upon the financial capabilities of the analysts, any of these features may serve a useful role during the analytical process.

For the most part, it is assumed that a recorder of the cassette variety has been discussed. However, it is also possible to obtain top-quality recordings from the reel-to-reel variety of recorder. The only drawback to the reel-to-reel recorder is simply a matter of convenience and expense. Generally, it takes longer to prepare a reel-to-reel recorder for analysis and the tapes (while longer) are more expensive than cassettes.

One word of caution: analysts should never rely on batteries to give a quality recording. An analyst is usually unable to tell that the power emitted from batteries at the time of recording will be the same as the power emitted at the time of analysis. If the power levels are not the same, an improper analysis may be made, or the recording will have to be repeated--a timewasting process for an analyst and a possible anger-provoking event for a speaker.

Another consideration that must be made is the type of cassette or reel-to-reel tape selected. No brand name will be suggested here, but one word of caution is given: insist that subjects or analysts provide

either a thirty minute or a sixty minute cassette (if a cassette recording is made). The reason for the advice is important in terms of keeping recording equipment in optimum working condition. Particularly if a cassette tape recorder employed is not a new one, the heads of the recorder will wear out quickly if they are forced to carry the weight of a ninety minute or one hundred and twenty minute tape. As a result, the recorder slows in both its recording and playback features, thus providing a distorted analysis and evaluation.

In short, a quality recorder can be purchased without undertaking great expense. The recorder should be placed in the room where the recording will be optimum. In all cases, the analysts are interested in recording the speaker's voice for analysis. Every effort should be made to ensure that the recording made is a quality one.

Questions for Interview

Typical questions employed in speech analyses include two different types of items: demographic and philosophical. Both types of questions lend themselves to a conversational and natural communication. There should be an equal number of questions concerning the speaker as an individual, in which the subject responds to questions about himself, his life, and his past experiences. These questions serve little purpose other than to provide the interviewer with some information about the speaker as a person. The philosophical questions, on the other hand, give the speaker an opportunity to express his opinions and thoughts on various issues. This type of question does not have a right or wrong answer, yet it should not be worded where an individual is caused to painstakingly search his mind for obscure information or where a speaker is made to feel that he must deliver a dissertation full of ideas. The following are checks that analysts should apply to the questions desired for use in the interview.

(1) Are the questions of the open-ended variety? The distinction between open-ended and closed-ended questions is: open-ended questions are those in which a respondent is asked to provide his own answer to a question of which a number of responses is possible; closed-ended questions are those in which a respondent selects his answer from a list provided him by the interviewer or those in which only one response is possible. Because the interview conducted in an analysis of speech habits is of the oral variety, open-ended questions that allow the respondent to communicate freely are clearly desirable. Closed-ended questions are usually more useful in cases where the actual information provided is important and these types of questions are usually more efficient when provided in a written format.

(2) Are the questions self-explanatory? Questions used in an interview should be simple and unambiguous. When the topic under discussion is complex and interpretations between interviewer and interviewee vary considerably, it is occasionally necessary for either of the individuals to fill in material for the question or answer to be meaningful. Questions should include words that do not require a definition for the respondent to understand. Some explanations of words may embarrass a particular speaker.

(3) Do the questions asked lend themselves to follow-up questions? An interview should not be "static." There is a degree of uniqueness and individualism in each interview, and the speakers will appreciate the interviewer and enjoy the interview more if the questioner will show some additional interest in the speakers and their answers. Merely adding personal touches to the questions will show the speaker that the interviewer has additional concern in him or her as a person.

(4) Can the respondent answer the questions? Most demographic questions would not need this check applied to them. However, questions of the philosophical variety need to be relevant to the speaker's background and interests, in order that the speaker will be able to answer the questions with some degree of confidence. It is usually desirable, therefore, that philosophical questions be included late in the interview, in order that the interviewer may determine which type of questions seem suitable for the particular speaker being interviewed.

(5) Are simple "yes" and "no" questions avoided? Needless to say, the most successful interviews for the purpose of evaluating speech habits are those that allow the respondent to expand beyond the mere minimum requirements for an answer to a particular question. It is extremely disheartening for an interviewer to constantly prod the subject. If the question is worded where the speaker may naturally respond and expand his own thoughts, the question is usually a good one.

A sample questionnaire that was used in Spring, 1977, at the University of Houston is included in the appendix section of this manual. While no perfection is claimed by that instrument, many of the considerations discussed in this section may be seen within the questionnaire.

One word to the wise: it is the interviewer's job to make the speaker as comfortable as possible during the interview. One of the best ways to achieve this is to take a personal approach to the interview. Before the tape is even turned on, the interviewer should introduce himself to the subject, ask such mundane questions as "How is it going this semester?" and "are you comfortable?" The interviewer should explain the procedures and rationale for conducting the interview, and encourage the speaker to expand on as many of the questions as he wishes. Explain the benefits that will ensue from the participation in the interview. Use as much honest ego-building material as possible.

Above all things, the interviewer must be confident. It is impressive to a respondent if the questions are so well known by an interviewer that a prompt sheet is not needed. If this is achieved, the interviewer may increase his or her own awareness of the communicative act. The interviewer should attempt to establish appropriate eye contact with the subject. It has been found that if an interviewer seems withdrawn and unsure of himself, the speaker may also exhibit reticent characteristics.

One functional way to "kill two birds with one stone" is to check the volume level of the recording early. Not only will this give the speaker a chance to say something before the actual interview begins, but also, the interviewer will be assured that the recording equipment

is functioning properly. As mentioned earlier, a popular filler for this purpose is to have the speaker count from one to ten, encouraging him or her to raise the volume as the numbers progress higher.

One final point should be impressed upon speakers before the actual interview begins. Speakers should be encouraged to be themselves during the interview. Assure them that the analysts are interested in their voices in a natural state. To place the subject's mind at ease about the nature of the questions to be asked, suggest that if the speaker considers any of the questions too personal to answer, he or she is certainly at liberty to omit it, but at the same time, remind the speaker that the more voice that is placed on the tape, the more thorough the resulting analysis will be.

Reading Selections

Reading selections should complement the conversational interview described in the preceding section. The passages selected should include as many of the sounds of the English language as possible. Samples of several reading passages have been included in the appendix sections of this manual.

The main requirement of the reading passages is that the selections be easy enough so that all speakers are able to read the passages with a reasonable chance of fluency. The passages should include words that cause difficulty for the lower-level readers that may be included in the sample.

Concerning the two passages selected for the appendix of this manual, readability formulas have been computed using Gunning's Fog Index of Readibility. The "Rainbow Passage" (adapted) contains 182 words and is rated at the 8.64 grade level. The "Diagnostic Passage" contains 159 words and is rated at the 8.24 grade level.

The reader should also note that each of the passages has been phonetically transcribed according to the formal General American Dialect, a Chicano Dialect, and a Black Dialect. Analysts should limit the number of passages included in any one interview, and it is preferable that the passages be read at the end of the interview.

One fundamental question that has often been posed to the writers concerns the desired length of the interview. The length of one interview is never important if there is not a rigid schedule established for them. However, at most large institutions undertaking a project of analyzing speech habits, it is expedient to establish such a schedule. The responsibility of keeping the interviews on schedule belongs to each interviewer. One should guage the amount of time spent and the amount of time remaining in each interview and adjust his questioning accordingly. While it is undesirable to do so, follow-up questions and even substantive questions can be omitted without great loss if time is pressing.

STUDY QUESTIONS

1. Write a substantial essay in which you develop fully the advantages and disadvantages of each of three methods of storing an individual's voice for analysis. Be sure to cite specific literature that both supports and refutes your point of view. Be ready to defend your essay orally in class.

2. How important do you feel that the environment in which an individual's voice is recorded is to the recording that is made? Delineate the trade-offs that an analyst must consider when selecting the communicative environment for recording.

3. Investigate specific brands of recording equipment (including tapes) and make a list of those that seem especially well-suited for the purpose of speech analysis. Be sure to take into account the economic factors of equipment.

4. Construct a list of questions that you might use for an interview in an analytical framework. Try to apply the "checks" delineated in the chapter to your set of questions. Be ready to discuss the potential problems orally in class.

5. What circumstances would cause you to select a particular passage of a certain reading level? What decisions must be made in the final selection of a passage for oral reading?

CHAPTER FOUR: THE EVALUATIVE INSTRUMENT

Before a proper analysis of an individual's speech habits can be made, an instrument needs to be by which analysts may rate the various speakers. There are two major goals for such an instrument. The instrument must be universally applicable to all speakers encountered, and the instrument must include all potential areas of speech habits that the analysts are likely to encounter. This chapter will explore potential categories for such an instrument, discuss its layout, and provide rationale for the inclusion of the categories discussed.

Evaluative Categories

The evaluative instrument should be developed in enough detail to provide areas for analysts to make judgments about individual's speech habits without having to be concerned with writing category labels and headings. For this reason, the analyst may want to include both major headings and sub-headings so that comments can be recorded in a designated area. The sample evaluative instrument included in the appendix section of this manual provides both major headings and sub-headings.

The evaluation sheets should also include space in which analysts may place a value on the observations recorded. Whether each sub-heading is given a rating scale, or whether only major headings are provided is a matter of personal discretions and should be decided upon within the framework of the individual study. On the sample form included in Appendix A of this manual, only rating scales for the major headings are included. The exact definitions for the ratings will be discussed in Chapter Five, but for now, let us state that the numerical differential used on the sample form is but one of the options available to analysts. A variable scale ("excellent," "fair," "weak") would perform the task equally well.

While the instrument selected for particular studies will vary with the emphasis given for each, this chapter will use the evaluative instrument included in Appendix A of this manual. Depending upon the framework desired for a particular study, adaptations may be made from any of the categories to be discussed.

There is always a tendency for analysts to point out those speech habits which are problems. However, most analysts should be able to note those habits which are beneficial to an individual's communication. When time is a factor in conducting an analysis, the emphasis of problems and deficiencies is justified. This manual, while not eliminating positive aspects of an analysis, largely concerns itself with those in need of improvement.

Eleven categories were chosen for the instrument, with sub-categories varying from two to ten in number. The first two categories are considered an integral part of any evaluative instrument. Because the English language is broken into consonant sounds and vowel sounds (categories one

and two) a great deal of information about one's speech habits can be included here. Excellent discussions concerning the difference between consonants and vowels will be found in most basic voice and diction textbooks, but for our purposes here, the fundamental difference between them is that consonants are produced with a high amount of obstruction of the air stream while vowels are sounds that are produced without obstruction. Both consonants and vowels, are labeled by their position within a particular word (initial, medial, final).

The reader should note that the above method is not the only way to analyze consonants and vowels, and should the analyst be well trained in voice and diction, this method may be somewhat laborious. For example another way to break down the categories might be by classification of sound. For consonants, this division could be accomplished by labeling the manner of production (plosive, fricative, affricate, etc.) or the place of production (lingua-palatal, bilabial, lingua-post-dental, etc.). For vowels, one could describe the sounds not as they appear in a word, but rather, as they are produced in the mouth (front, middle, back). While this categorical method appears more clinically correct, it would appear that there is some loss of analysis by using this method. An analyst jight not identify a sound as it appears in all positions in a word, but rely on a single production of that sound to make the diagnosis. A sound could be misproduced in one position of a word, but used correctly in other positions. For example, upon hearing the /r/ sound dropped in a word such as "marshal," an analyst may record that the speaker does not produce an /r/. However, the speaker may very well produce the /r/ in words such as "rat" and "tore." Hence, the speaker only has problems with the sound in the medial position of words and not in terms of every occurrence of the sound.

The third category is labeled "suprasegmental features" and includes as sub-categories those phenomena that are frequent additions to normal speech that both add to or detract from the meaning of sentences. On the sample form included in Appendix A, the sub-headings are very general in nature. Some analysts may wish to be more specific with them. For instance, rather than use "pause" as a general term, it may be more accurate to have analysts identify specific word and sentence placement where such pauses occur.

The fourth category on the sample form is "pronunciation." While this category may be considered under the suprasegmental category, the rationale here for separating the category from surpasegmentals is that pronunciation errors occur frequently in normal speech, and, analysts would have no trouble filling a complete section for pronunciation errors alone for an average number of subjects.

The category "physical critique" allows analysts the opportunity to record the non-verbal phenomena that occurs in speech. Specific sub-headings such as "gesture" and "posture" will be discussed in the next chapter.

The next four categories are also used for descriptive analysis and are included as main headings on the sample form because equal weight should be given to each heading in relationship to the other categories discussed. Each of the four categories are significant areas in vocal speech production, and warrant careful analysis and evaluation by the analysts. The categories are "loudness," which could also be labeled intensity or volume, "voice quality," which has ten distinctive labels as sub-headings, "pitch," which could also be labeled range, and "rate," which could also be labeled speed. The behavioral manifestations of these sub-categories will also be described in the next chapter.

The tenth category on the sample form is "dialect," which has as its sub-categories "acceptable" and "pronounced." To be accurate in this category, it is recommended that analysts be familiar with characteristics of the predominant dialects with which he is likely to come into contact. The category suggests that the analyst identify particular phenomena that support the sub-category suggested.

Finally, an omnibus category labeled "individual or isolated deficiencies or problems" is included on the sample instrument. Such a category allows analysts the opportunity to comment upon anything notable or observable about the speaker's voice that was not covered by another category. For instance, if analysts chose to have speakers orally read selected passages, comments here could reflect the speaker's skills in reading ability. Also, if the analysts detect any resentment, unwillingness, or eagerness in a particular speaker to participate in the communicative act, comments reflecting that lack of desire or enthusiasm are appropriate for this particular category.

One final note should be made regarding the selection of evaluative categories for the instrument. It is highly necessary that an instrument be selected that accurately reflects the speech deficiencies and manifestations that are likely to occur within the speech community to be studied. Because of this necessity, a broad instrument that may include categories or sub-categories that may not be necessary is actually more informative and more time-saving than a poorly defined, overly-narrow instrument. When constructing an instrument, analysts should hypothesize those manifestations that are likely to occur within their population before an instrument is developed. Even if this means randomly sampling a dozen subjects and observing their vocal habits to formulate or verify specific categories, time will be saved over a process of using an instrument that is not reflective of the subjects to be studied, therefore causing analysts to construct a new instrument and re-evaluate all speakers according to the new instrument. The writers even recommend that a thorough review be made of the instrument after the first few subjects have been evaluated. Clearly, it will take less time to re-evaluate a few subjects than it will to re-evaluate all subjects.

Layout

"I haven't got room to write" is the last call the analysts needs to hear from some one who has observable speech phenomena to record but is unable to do so. For this reason, the layout of the evaluative instrument is equally as crucial as its content.

Several different options are available to analysts who design an evaluative instrument. The simplest method, though it often has drawbacks in terms of recording specifics, is to include all possible occurrences on the form and allow analysts to circle those that they actually hear. Notice on the sample evaluative instrument included in the appendix of this manual that sections six through eleven include all of the possibilities that could occur under each major heading. No other explanations are required, as only an identification is necessary. This method works well for those categories such as "Pitch" and "rate" that do not have extensive subcategory identifications. However, this method would be quite paper consuming (let alone time consuming as the analyst must search for the proper combination) for categories such as consonants and vowels. Also, this method would be impossible for use in such categories as pronunciation and suprasegmental features because the content of speech would not necessarily be totally standardized for all speakers. While a general sub-category could be circled, it would have no meaning until a specific referent was added. For instance, analysts could easily circle "initial syllable" under the pronunication category, but until the content of the dropped initial syllable within a specific word is specificed, the comment has no impact.

Another method for layout would be one in which the analyst does not have a guide in which to circle certain sub-categories, but rather, must make a written identification of all phenomena observed. The advantage of this method may be obvious--the analyst has the opportunity to record not only the phenomena itself, but examples of its manifestations. For example, under this method, if a subject were to drop a final syllable, which would be recorded under the major heading "prounciation," the analyst could also record the exact word and the syllable which was dropped. The disadvantages of this method are equally clear--much additional writing must be done by the analysts that could be alleviated by simply circling specific attributes.

Perhaps the most desirable method is combination of the two aforementioned methods and a simple identification for those categories for which that method is best. Allow room for complete explanations with examples for those categories that lend themselves as such. The sample form included in the appendix section of this manual illustrates the compromise.

A study conducted in the Spring, 1977 semester (Fogel, Wilmeth, Krayer, 1977) employed the statistical procedure of factor analysis in order to reduce the speech data collected to a more parsimonious form as well as to determine whcih categories of the evaluative instrument clustered together. Two major factors emerged from the analysis which were later labeled Production Accuracy and Production Quality.

The categories grouped under Production Accuracy were "Consonants," "Vowels," Suprasegmental Features," "Pronunciation," Rate," "Dialect," and "Individual and Isolated Deficiencies." The categories grouped under Production Quality were "Physical Critique," "Loudness," "Voice Quality," and "Pitch."

As additional data is collected in future studies employing the evaluative instrument presented in the appendix, and should these categories habitually factor as outlined above, analysts may wish to structure an instrument around these two major factors.

STUDY QUESTIONS

1. The writers suggest "that a thorough review be made of the instrument after the first few subjects have been evaluated." What advantages would this review have? How would you justify the additional time it would take to conduct such a review? Can you name some consequences that might result from a failure to review the instrument?

2. It is stressed that certain adaptations of the instrument included in the appendix should be made if necessary. What changes would you make in the instrument for your purposes? How important are those changes for the framework of your study?

3. Most research methodology texts discuss different types of validity applied to instruments. When you have finally decided upon a particular instrument, what considerations concerning validity did you make? Note: Validity refers to the degree to which a test or instrument actually measures the phenomena it claims to be measuring.

CHAPTER FIVE: ANALYZING SPEECH HABITS

Once a suitable instrument has been devised and the speakers have been recorded, the actual analytical process can begin. This chapter will detail the meanings of the sub-categories under each main heading of the evaluative instrument and provide examples of possible behavioral manifestations. Even if all analysts do not use the same evaluative instrument as the sample form provided in Appendix A of this manual, the discussion contained herein should apply to most instruments that are developed.

Consonants

The first three sub-categories that comprise the major heading "consonants" deal with the position or appearance of the consonant in the word. In the three sub-categories, analysts should be concerned with the substitution or omission of a consonant. Perhaps the clearest method of marking these omissions or distortions is through the use of the International Phonetic Alphabet coupled with hyroglyphics. The reader should refer to Appendix B for a list of the phonetic symbols and their usages. Of particular importance in that list are the key words that include the particular sounds. As an example of a possible marking in this category, if a speaker substituted the /t/ sound for the /d/ sound in the medial position of the words "better" and "baptist" a clear method for marking would be as follows:

Medial usage	/t/ ———————	/d/	(better)
	/p/ ———————	/b/	(baptist)

Similarly, if a speaker omitted the final /t/ in the word "haven't," a clear method of marking the phenomena would be as follows:

Final usage /t/ (haven'<u>t</u>) or (haven'<u>t</u>)

To aid analysts in establishing clarity here, one rule for phonetics should be introduced at this point: when writing phonetic symbols, the distinguishing feature from orthographic representation is the use of brackets and slash marks. Individual sounds are always represented in slashes, while words transcribed in phonetic symbols are always represented in brackets. Orthographic words are usually represented in quotation marks or parentheses. For instance, orthographic 'j' is usually not equivalent to the phonetic symbol /j/. The word "Jerry" is transcribed as: [ʤɛrɪ], while the /j/ symbol appears in the word "lawyer" [lɔjɚ]. Analysts must understand that <u>sounds</u>, <u>not spellings</u>, are the key factors for examination here.

The fourth sub-category under "consonants" is labeled "misproduction" and should be used when a sound is consistently distorted, regardless of the position or appearance of the sound in a word.

Vowels

As in the preceding category, three sub-categories deal with usage and appearances and one category deals with misproduction. One of the most prominent vowel manifestations for Texas dialect patterns is the elongation of vowel sounds. This type of comment often should be noted under the sub-category "misproduction." Another Texas manifestation is a substitution of the /ɛ/ sound with the /ɪ/ sound as in "get." [gɛt] → [gɪt] Other dialectical areas would have similar manifestations that are certain to appear. For instance, it is well established that the Southern dialect elongates the /e/ sound, changing "cake" [kek] to [keɪk]. Likewise, the Brooklyn dialect is known to change the /ɑr/ in "right" [rɑɪt] to /ɑ/ [rɑt]. See sources such as Wolfram and Fasold (1974) and Blunt (1967) for a full discussion and numerous examples of dialectal variations.

Suprasegmental Features

In this category, analysts should identify those characteristics that are found in the speech behavior of their subjects that distract, impair meaning, or hinder intelligibility. The first sub-category is labeled "pause" and is usually identified as a problem in both the speaking and reading patterns of a speaker. More specifically, an analyst might mark the "pause" sub-category if pauses were taken in a correct position (after a comma or period), or in an incorrect position (breaking up the words into unmeaningful phrases). Of course, analysts would usually mark only those features that were incorrect unless the manifestation is consistently produced very well. Because of time and space limitations, recording correct manifestations are usually a liberty for an analyst.

The second sub-category is labeled "word accent" and deals with either the de-emphasis of important words in a sentence of the emphasis of words that are insignificant. The third sub-category is labeled "added sounds" and indicates that the speaker uses unnecessary and unmeaningful sounds in his speech. Examples of added sounds are "uh," "umm," and "ahh." The fourth sub-cateogy is labeled "added words" and indicates that the speaker includes unnecessary and unmeaningful words in his speech. Examples of added words are "you know," "like I said," and "the thing is." A distinction between "added sounds" and "added words" should be clarified at this point for the reader. The actual distinction is one of "speech" and "language." Not all speech should be considered verbal. That is, an individual can exhibit speech by merely producing sound. Such sound need not be accompanied by meaningful verbal components such as words, phrases, and sentences. Hence, an "added sound" does not convey the same level of information or meaning as an "added word." The actual question that an analyst must answer is "do the sounds and words distract from or add meaning to the intended communication?" If the words or sounds are not functional in the sentence, then a notation in this particular section is appropriate.

Finally, a sub-category labeled "meaning stress" is included to record such phenomena as distorting declarative sentences into interrogative ones or not giving exclamatory sentences the proper intonation.

Pronunciation

This category should include comments that reflect both the accent placement on syllables within a word and the total misproduction of a syllable within a word that would not fall under the previously discussed "misproduction" sub-categories of consonants and vowels.

Sub-categories are labeled by syllable positioning (initial, medial, and final) and also by the entire word. The category can quite often be used as a section in which individual words that are not discernable or completely distorted are noted.

Examples of mispronunciations that could be noted within this category are as follows:

initial position: (because) [bɪkɔz] → [kʌz]

medial position: (syllable) [sɪləbəl] → [sɪlæbəl]

final position: (Carter) [kartɚ] → [kartə]

misproduction: (physicists) [fɪzɪsɪsts] → [fɪzɪks]

The reader should not be alarmed if the above examples are difficult to comprehend. It should be stressed here that a working knowledge of the International Phonetic Alphabet, while very helpful, is not absolutely necessary to conduct an analysis of speech habits nor to record manifestations of the various habits. Phonetic representations are given here for purposes of clarity only.

Physical Critique

This category should include comments that originate from two sources. First, observations that were made by the interviewer could be noted here, and second, those observations that can be ascertained by simply listening to the tape of the interview. If the interview is video-tape recorded, these two sources, of course, will be the same.

Comments appearing in this category can be correlated with but not caused by comments relating to phenomena appearing under other major categories. A hypothetical example should add clarity to the above discussion. If the analyst marked that a particular speaker dropped final plosive sounds (for example, /p/ or /b/) there is a possibility that the same speaker has improper lip movement that impairs the formation of the sound. The same is true for vowel sounds, where subjects may have confused the /i/ and /u/ sounds simply because they failed to discriminate between the positions for the various sounds. Let it be stressed here that analysts should be careful about attempting to explain certain recorded manifestations on the basis of physical critique. Such explanations could very well be erroneous due to the possibility that an analyst may infer causality from a mere correlation. As Lapin (1975) points out in his statistical treatment of the causality-correlation dilemma: "The correlation coeffieicent measures only the strength of association between two variables. This is a statistical relation-

ship, and a large positive or negative value for r [a correlation coefficient] does not indicate whether a high value of one variable may cause the other to be large" (p. 374).

The physical critique is divided into seven sub-categories. "Lip movement" refers to the activity of the lips in sound production and is strongest when taken from an observed viewpoint, rather than from a perceived "guess" from a recording. For example, one could "guess" that a speaker who does not produce the /p/ sound has improper lip movement, but unless the lip movement had been noted during the interview, the observation remains mere conjecture. Likewise, if a speaker substitutes /o/ for /ɔ/, the speaker may be tensing the lips too much.

"Lower jaw movement" refers to the activity of the mouth in sound production. Often, the difference between correct and incorrect production of the /ɛ/ and the /æ/ sounds is due to the fact that the speaker does not lower the mandible enough to make the /æ/ sound. Again, this does not mean that each time the /ɛ/ and /æ/ are improperly differentiated, the jaw has not moved into a certain position. This hypothesis could be verified easily be observing a video-tape recording.

"Throat tension" is marked when the speaker appears to have a voice quality that interferes with the understanding of the words conveyed. Throat tension can be manifested several different ways. These manifestations are described in detail in the category labeled "quality." Suffice it to say here that these types are labeled "throaty," "vocal fry," "breathy," "harsh," "strident," and "hoarse."

"Breathing" should be marked by analysts in two specific instances--either when a speaker appears not to have the proper breath control necessary to project his voice in order to finish a thought or sentence pattern or when the speaker audibly gasps for air in his speech. "Posture" is a sub-category that, for the most part, would have to be noted from the interview and can have such behavioral manifestations as slouching, chair-swiveling, or bending the body forward.

"Gesture" can be marked in cases when the speaker allows the bodily movement to communicate for him or to distract from the communication. However, there will be cases in which gestures compliment the spoken communication. To contrast these ideas, the reader has certainly encountered individuals who, through the use of their hands, attempt to "generate" words when they are at a loss for them. The gesturing continues until a word is found for the particular idea desirous of being expressed. On the other hand, during a communicative segment a speaker may say "this" or "the one on my left" without ever providing a specific referent for "this" or "the one." In this case, a gesture to point out or emphasize a particular referrent is not only desirable but necessary. As Wolff and Gustein (1972) suggest, "illustrator gestures may have an internal function as a facilitator of vocal expression as well as external communicative function in their own right" (p. 288). Finally, a sub-category labeled "other" is included as an area for particular phenomena to be recorded that are not covered under another category.

Loudness

This category of volume is divided into three sub-categories, two of which deal with the intensity of volume and are labeled "too loud" and "too soft." The third sub-category is labeled "fading" and refers to the dropping of sound, usually involving several words at the end of sentences or thought patterns. "Fading" should be marked when the sentence or thought pattern is initiated with an inappropriate or unintelligible low level of sound.

In a speech analysis conducted in the Spring, 1977 semester at the University of Houston, the analysts were able to generalize problems of volume to the specific classroom situation. For instance, if a speaker's volume was extremely soft, it might have been noted that the volume level was appropriate for a small-group interaction, but inappropriate for a lecture period. By the same token, if a speaker had incessantly loud volume, it might have been noted that the volume is adequate for a one-to-many interaction, but obtrusive for a small group encounter.

Voice Quality

Quality refers to the individual uniqueness of voice. Ten different sub-categories are included under this heading. Two major reasons come into play in the marking and elaboration of these sub-categories for the analyst. First, a sub-category should be marked whenever the speaker's voice quality is distracting from the words or thought patterns being developed for a listener. Second, a sub-category should be marked whenever the quality of a speaker's voice seems to cause discomfort for the speaker. Many of these sub-categories reflect possible severe problems and strain on the voice, which in turn, can impair the ability of the speaker to communicate effectively.

The first sub-category is labeled "harsh" and indicates a degree of roughness, grating, and laryngeal tension in the voice. Often this is a result of the speaker overprojecting or overenergizing. The sub-category "hoarse" is associated with escaping breath and hypolaryngeal tension such as the quality one would characterize as a cold or sore throat. The best advice one could give a speaker who has a hoarse voice is to rest the voice and avoid the strain associated with speaking. If hoarseness continues over two weeks a speaker should see a physician. The third sub-category is labeled vocal fry which is a scraping sound caused by the hard attack and closure of the vocal folds followed by a sharp opening. Fourth is the sub-category "breathy" which includes an escape of unphonated air due to an open glottis. This category is usually marked solely for its extreme distractive function, as the listener will hear sounds accompanied by the released air. This type of voice (coupled with a low pitch) in a female is often labeled sexy by listeners.

The fifth sub-category is labeled "throaty" and is usually marked when there is a heavier form of throat tension and vocal fry present. A throaty voice is a hollow and heavy sounding one characterized by insufficient oral resonance, lax movement of articulators, and faulty emission of breath. The sixth sub-category is labeled "glottal attack" and refers to the breaking up of words with a small hacking sound, usually in an

abrupt, unexplainable, and uncalled for manner. A glottal attack is caused by hyperlaryngeal tension and faulty control of breath emission. For instance, an unexplained break between the "a" and the "b" in "adorable" could be characteristic of a word with a glottal stop where it is uncalled for. The phonetic symbol for a glottal stop is /ʔ/.

"Nasality" is the seventh sub-category and should be marked either when the speaker adds nasal resonance where it is not needed in specific phonemes, or when the speaker exhibits excessive nasality in his or her speech in general. The counterpart of nasality is "denasality" and should be marked whenever the speaker does not nasalize the correct sounds. Nasality means resonance of the sound produced within the nasal cavity as opposed to resonance that occurs within the oral cavity. This is achieved through laryngo-palatal action. The soft palate must be lowered to allow the air stream to enter the nasal cavity and resonate within the cavity. To block the air stream from entering the nasal cavity, the palate must be raised to its normal position. Only three sounds in the English language (/m/, /n/, and /ŋ/) should resonate in the nasal cavity. If these sounds do not resonate within the nasal cavity, we say that the speech is denasalized. If more sounds than the three aforementioned resonate within the nasal cavity, we say the speech is nasalized. For a complete discussion of nasality, consult Eisenson (1974), especially pages 79-86.

The final sub-categories are labeled "strident" and "muffled." A strident voice is an unpleasant, strained, and tense throat sound. It is usually high pitched and brassy in nature. A muffled voice is associated with sounds that are held back and not projected in a forward manner.

Pitch

This category uses the standard definition of pitch, that is, the range of one's voice on the musical scale. The first two sub-categories are labeled "high" and "low" and are not used for mere descriptive purposes, but rather, should be marked when the voice of the speaker seems strained and uncomfortable for him as an individual or when the exhibited pitch causes discomfort to the listener. The question that the analyst should ask therefore, is not "is the pitch high?" (which is mere description), but rather, "is the pitch too high?" (which is analytical)

The third sub-category is labeled "narrow range" and is quite often though not necessarily, associated with "monotone." These two sub-categories differ in that narrow range indicates that several different tones are exhibited, but the speaker is not utilizing a full 1½ - 2 ocatave range. One could often associate a narrow range or monotone with a subject that is not enthusiastic about the interview or oral communication in general.

The fifth sub-category is labeled "break" and refers to the occasions in which speakers suddenly move from one level of pitch to another level of pitch. This is not atypical of the average teenager in the process of changing voice.

Finally, the sub-category labeled "repeated patterns" refers to those speakers who exhibit an overly rhythmical pattern in their speech. A speaker with "repeated patterns" may produce sentences as follows:

$$\text{The}_{\text{day}}\ \text{was}_{\text{light}}\ \text{but}\ \text{the}^{\text{sun}}\ \text{was}_{\text{low}}.$$

$$\text{The}_{\text{book}}\ \text{is}_{\text{here}}\ \text{and}\ \text{the}^{\text{manual}}\ \text{is}_{\text{there}}.$$

That is, there is a variety of pitch present in the individual's speech, but the variety is regularized between sentences.

Rate

Rate refers to the speed or pace of speech exhibited by an individual. The four sub-categories on the sample instrument are labeled "too fast," which is manifested in dropped sounds, slurring words, and breathing problems; "too slow," which is manifested in overly long pauses and seemingly incompleted thought patterns; "groping," which is associated with the speed, meaningless silence, and difficulties with word selection often employed by the speaker, and "poor phrasing," which is associated with inappropriate pauses, meaning stress, and grouping of words.

Clearly, as will be discussed in Chapter Seven, a way to improve the effectiveness of a speaker's rate is twofold: watch the signposts in oral reading (commas, periods, and semi-colons) shown orally by pauses and pitch changes and make certain that all sounds are produced correctly. Omitting plosive sounds for example, will automatically cause a speaker to pick up speed unnecessarily.

Dialect

Dialect can be viewed from one of two different standards--dialect that is perceived as different from an individual's own method of speaking, or dialect that is perceived as different from a general standard method of speaking.

For analytical purposes, the preferable choice would be to use the "General American Dialect" and measure the amount of deviance that each speaker exhibits from that standard. The reasons for this are twofold--first, using a standard such as the General American Dialect allows conformity and uniformity across all raters and subjects, and second, the use of the General American Dialect reduces some of the subjectivity that might influence a particular rater's decision. The subjectivity of ratings is reduced because the analyst will be comparing each sample of speech to the standard dialect, rather than to his own dialectal patterns. The phonetic alphabet in the appendix utilizes the General

American Dialect symbols and the key words correlated with each symbol are also General American.

The components of dialectal forms need not be discussed here for a complete discussion see Blunt (1967). Suffice it to say here that in a normally distributed group one could expect a number of geographical patterns (Texan, Southern, Eastern) as well as a number of cultural patterns (Black, Mexican-American, Italian) to be represented. What is important to note under "dialect" is not that a particular dialect exists, but rather, that a particular dialect interferes with the analyst's understanding and recognition of the words and sounds uttered by the speaker. The acceptable category should be marked whenever there is not any extremely impaired understanding and the pronounced category should be marked whenever understanding is impaired to a critical degree.

Needless to say, phenomena such as similarity between analyst and speaker or stereotyping due to ethnic or cultural differences should not be allowed to interact with the judgment of whether a dialect is acceptable or pronounced. For a full discussion of cultural and social ramifications concerning dialects, see Wolfram and Fasold (1974).

Individual or Isolated Deficiencies

As noted earlier, this is an omnibus category, and comments made here could include a wide range of topics. It enables analysts to make notations, complimenting speakers on good facets of their exhibited communication, and it also enables analysts to point out problems that are not covered by any other category.

Possible complimentary remarks could include such topics as relaxed or enthusiastic communicator, excellent oral reader, or perhaps an overall comment pointing out general skill in enunciation or articulation. Some of the problems that could be pointed out under this category include notations such as unclear plurals, unclear negatives, number of reading errors (f such a tabulation is kept), or particular emphasis on distracting auditory or vidual mannerisms that had been noted from an earlier category.

It is also possible that analysts would wish to make comments for improvement (that will be discussed fully in Chapter Seven) such as a recommendation to take a particular course or engage in study such as "oral reading" or "voice and diction," or a recommendation for the individual to engage in self-study for improvement of specific sound production. Notes could also be made in this category if the analysts felt that some problems could not be solved in any other place but through a clinical or pathological program.

It is entirely possible that analysts may wish to create an entire category exclusively reserved for improvements and recommendations. However, the creation of such a category does not fit the framework of analysis described in this manual, as problems would not be identified and ratings would not be applied. Analysts should explore the particulars of the "individual or isolated deficiencies" category within the framework of their individual study.

STUDY QUESTIONS

1. The careful distinction was made in this chapter between correlation and causality and its application to speech analysis. Specify several possible behaviors that could appear during the course of an analysis and delineate the difficulty that an analyst would have in asserting causal explanations.

2. Do you agree that the employment of the General American Dialect as a standard for comparison reduces the subjectivity of a rater? What considerations would a raterh have to realize when coding behavior under the "Dialect" category?

3. Select any one of the categories discussed in this chapter and develop its component parts fully in an essay. Be sure to examine speech literature that deals with each of the sub-categories. Be ready to present your essay orally in class.

CHAPTER SIX: RELIABILITY AND STANDARDS FOR RATINGS

Once all problems and deficiencies have been discerned from the examination of one's voice, a value judgment must be made concerning the severity of a particular problem or the quality of production. This chapter will explain the meanings of the numbers assigned to the evaluative instrument included in the appendix section of this manual, discuss criteria for determining which rating will be assigned for a particular category, and examine the problems of rather reliability.

Standards for Ratings

As one can see by a cursory examination of the sample evaluative instrument included in the appendix section of this manual, each category is evaluated on a point scale from one to five. For that particular scale, the following operational definitions may be used. Other circumstances would of course, allow other definitions to replace those discussed in this chapter.

A score of one indicates that a major difficulty is present that cannot be remediated by general therapy or practice, and usually suggests that clinical and therapeutic help is needed. The score also represents a severe difficulty in the intelligibility of speech sounds. A score of two indicates that the individual evaluated is weak in the category, that there is great difficulty in intelligibility, yet, the problem can more than likely be solved by help that could be offered through general therapy or practice. A score of three indicates that the individual is fair in the category, that the individual is either inconsistent or not careful in his or her usage, and that the speech patterns exhibited could be enhanced either through self-study or specific courses in voice and diction. A score of four indicates that the problem with the category is an acceptable one that did not greatly impair intelligibility, and that when a problem occurs, it keeps that individual just one step away from very clear production. Finally, a score of five indicates a truly outstanding performance in the category and that the individual has complete mastery of the category being measured.

Once general guidelines, such as those listed above, have been agreedupon by analysts, a determination should be made as to what exactly constitutes the difference between "greatly impairs intelligibility," "carelessness," and "mastery." The differences in perceptions of meaning are going to vary between analysts because their individual perceptions of the phenomena will vary. However, one standard rule that all analysts can easily adhere to is this: does the phenomena reported occur often enough to constitute overall intelligibility problems? A complimentary question would be: how much meaning and intelligibility is impaired by the occurrence of the problem? If these questions are raised for each category, problems that occur in isolation will not be given the same wieght as those problems that occur consistently, and more importantly, the effects of individual perception will be weighed against overall usage and the individual rater bias will be diminished considerably.

In short, analysts should find that the evaluative process is perhaps the least time consuming stage of the analysis described in this manual. However, the evaluative process is also the most important. The ratings that are given for each of the analytical categories will greatly affect the type of remedial program that is suggested for each individual.

Reliability

One major area of concern for the rater of speech habits is the consistency with which ratings are made. While it may seem obvious that when two people use a category scheme to code behavior they should agree on any one behavior as to its rating, analysts do not always check empirically this assumption. The present section will aid the analyst in making judgments about the reliability of the rating instrument, particularly in terms of whether or not two raters can make the same judgment about the same behaviors.

Coding speech habits is a procedure by which speech data are categorized according to a set format. Through coding of speech behavior, the data are transformed into numerals that can be tabulated and counted. The assignment of numerals to behavior is not automatic though, since it involves the judgments of a coder.

While a coder or rater uses the format presented in Appendix A, he or she must make judgments about assigning a category and numberal within the category. For example, if an observation is made that the person drops final plosives and the dropping of those sounds is considered severe in terms of the interpretability of the speech, then the rater may mark a one for the final consonant category. This act of judgment is called coding.

One problem with this procedure is that the judgments of raters may be colored by irrelevancies such as the appearance and mannerisms of the respondent, his or her accent, responses to previous questions, and so on. There is also a tendency to develop a frame of reference with respect to the material that one is coding. Also, problems may arise when a coder from one dialect speaking group codes a different dialect speaking group.

These problems are all considered ones of reliability. There are many things that may operate to make the judgments of coders unreliable. These factors can arise from the data being categorized, the nature of the categories, the coders themselves, or even the unrepresentativeness of the particular speech sample. The discussion that follows takes in only a few of the considerations you may want to consider as you code speech habits.

One concern arises from the definition of the categories. The value of the categorization of data depends considerably on the interpretability of the categories employed. This facet of reliability has been discussed earlier. The reader should pay close attention to how each category is defined and the manner in which the categories are to be employed. The categories are designed to be mutually exclusive and at the same time exhaustive of at least the major speech habits the analyst

is likely to encounter. Be sure all coders have similar ideas about the definitions of categories as well as their use.

A second conern is the capability of the coders. It should be apparent that the reliability of the coding of the speech behavior is affected greatly by the competence of the observers. Be sure that the coders know each category and can use them with great facility. If you need to train coders, consider the following procedure: (1) explain the various categories and give many examples; (2) have all the coders practice the analysis on a sample of speech; (3) discuss any problems associated with the coding--it may be that as a result of your discussions with coders you may want to change a particular category or even eliminate it entirely; (4) after all preliminary discussions are finished, have the coders evaluate a sample of speech behaviour they have not heard previously. Be sure that each coder makes judgments independent of the others.

In coding the consistency of judgments, one may use as a standard of coding the principle investigator or analyst or some measure of consistency with an external criterion. Depending upon the results of the reliability checks, various decisions can be made about the categories, raters, or speech data. It may be that a particular coder is not aware of some dynamics involved in analyzing speech.

In the present manual, it is likely that only one person will be making the judgments. However, this situation does not eliminate the problem of reliability. In the case of one rater, another person, knowledgeable about this type of analysis, should be asked to make judgements for comparison purposes. In this way the analyst can separate his or her own biases from accurate judgments about the speech data. Before stating specifically how one can compute a measure of reliability, a final problem needs to be discussed, unreliability due to the data.

Some of the difficulties that occur in coding result from inadequacies of the data. Frequently, the data do not supply enough information for reliable coding. For example, the communication situation in which data are collected may be too short to yield enough information upon which to make judgments. In some cases data collection techniques may have varied from one evaluation to another. You need to ask questions about the data, some of which are as follows: (1) is there enough speech data upon which to make judgments? (2) is the speech representative of the speaker's "normal" speech habits? (3) did the situation affect the speech habit in a significant manner? and (4) if more than one person is evaluated, how comparable are the situations? (5) Was one analysis much different from the others?

Given the above three considerations--categories, coders, and data, one can now measure reliability in a more consistent fashion. Below is a means by which you can code the reliability of your observation.

One way to compute reliability is to look for consistency between raters. First, take a sample of speech that would allow for the description of one category. One such tape is available with this manual. Have at least two raters (most likely this will be the reader and another evaluator) and together listen to the sample of speech in the category. Make your descriptive comments and also a designation on the one to five scale. Did you and the other person agree on your descriptive comments? How about on your designations of the numbers?

If you find that you did not agree, then discuss the differences and begin the process over again. If you did establish consensus, then move on to other categories. After all categories have been processed in this fashion, you are now ready to code a completely new sample of speech for reliability. This last sample should allow for all of the categories to be used. Each person is to listen to the speech and then make a designation on each of the categories. After completing the entire evaluation, compare each rater on each category. Ideally, you and the other rater should match perfectly. However, in reality, this rarely occurs: don't worry, you can still establish good reliability.

Take the number of exact agreements on categories and divide by ten. If the number falls below .70 look over the data and find out why. You should be able to get .80 reliability on exact ratings and .90-1.00 for near exactness (where one rater shows a five on a category and another rater shows a four).

If you feel comfortable with the reliability then one rater can evaluate speech habits for others and assume that individual biases are not distorting the judgments. Periodic checks on reliability would be helpful. Also if you attempt to rate a particularly severe problem you may find that the reliability changes drastically. Be sure to check the unusual cases for rater biases in making judgments.

While the present discussions could contain many other ideas on reliability and validity, the purpose here was to introduce the reader to the importance of objectivity in ratings. Any standard measurement book would discuss these and related issues in greater detail.

In summary, be sure that your judgments are objective and free from your own biases. As you rate the speech of others remember that you are commenting on another's behavior for the purpose of assessment and remediation. Clearly, if the assessment is unreliable, one could not hope for a useful remediation program.

QUESTIONS FOR STUDY

1. A suggestion was made in this chapter concerning the training of coders for evaluating speech habits. Delineate they types of examples (including speech behavior) that you would utilize in such a training session. What qualification would you like to see the director of such a session have?

2. In this chapter, a numerical coding system was presented. Can you suggest a more flexible and efficient system. Delineate your ratings and their definitions in a paper to be presented to the class.

CHAPTER SEVEN: METHODS FOR RECOMMENDING IMPROVEMENT

The project is almost finished--the voices have been gathered, the tapes have been analyzed, and evaluative ratings have been attached to each person. The last consideration is one that actually constitutes the truly humanistic side of the analysis. That is, the analysts should attempt to provide information to speakers that will help them remedy the speech deficiencies pointed out by the analysis. The specific methods of providing the information need not be discussed here--indeed, either by taping comments or providing speakers information by written means can be equally effective if done well. The real question that will be answered in this chaper is "knowing that certain speech habits are prominent for a particular speaker, what options are available for the analyst to help that speaker alleviate those problems?" The organizational basis for the chapter will again be the eleven categories included in the sample evaluative instrument in the appendix section of this manual. Each of the potential problems with possible solutions and advice for individual speakers with those attributes will be discussed. Wherever possible, categories have been grouped to avoid providing remediation materials for any of the categories discussed in this chapter. Rather, our purpose is to provide analysts with a sample of the type of materials that are likely to be successful in recommending improvement for speakers. The reference list included in this manual provides a good starting ground for analysts eager to pursue practice materials for problems discussed in this chapter.

Two ideas should be introduced at this point. First, advocating that speakers change their mode of normal speaking is more than a simple adjustment of certain phonetical or phonological phenomena. Rather, a change of one's speech habits is likely to change that individual's cultural, psychological, and geographical self-conceptualizations. For instance, advocating that a Chicano speaker change the /i / to /ɪ/ and the /s/ to /z/ in the word "his" is much more than a phonetical change. It is also a loss of the cultural identity associated with pronouncing [hɪz] as [his]. Second, if the speaker has a pathology problem he should be immediately referred to a speech therapist. Therapists can be located through the Yellow Pages of the phone directory. Therapists are specially trained to handle pathological problems, and speakers with pathological problems need therapists' expertise.

For these reasons, analysts should be careful to advocate only those changes that are detrimental to the <u>effectiveness</u> of an individual's speech and leave alone those features that identify an individual's origin, culture, and self-concept, unless they prove ineffective for him. (The standard of effectiveness is determined by answering two questions: does the speaker's speech interfere with the idea being presented (does the listener pay attention to the manner of speaking rather than the idea?) and does the speaker's speech make him uncomfortable (physically) while he is producing it.

Consonants and Vowels

In order to correct the lazy or careless speech that is surely a causal factor of dropped or substituted consonants and vowels two remediation methods are recommended. First, there are many voice and diction textbooks that have printed lists of drill words containing each of the consonants and vowels as well as sentences that contain combinations of the various sounds in contexts. If speakers who have problems with specific sounds are provided lists such as the ones printed below, they can engage in a program of self-study and drill. The following sample list is adapted from Developing Your Speaking Voice by John P. Moncur and Harrison M. Karr (1972):

/m/ Repeat each of the following words containing the /m/ sound.

Initial		Medial		Final	
mar	music	compose	common	swim	broom
men	maternal	companion	dramatic	same	perform
meet	marriage	summer	comely	palm	thumb
most	mourn	remember	tumult	dream	hymn
mill	mood	element	tamper	done	tomb

Other standard texts are listed in the reference section.

Rarely however will such self-study techniques suffice by themselves. The problem is often caused by a speaker not hearing the difference between various sounds. For that reason, it is recommended that each word list be reinforced and accompanied by an identical high-quality tape recorded list in order that the subjects will be able to pronounce each of the sounds and word lists after they hear it on tape.

Suprasegmental Features

Unlike the aforementioned solutions to vowel and consonant problems, suprasegmental difficulties can be solved only through self-realization, determination, effort, and knowledge. Analysts will not find it at all uncommon for speakers to express surprise at being told they exhibit difficulties with some of the suprasegmental features, particularly added sounds and words. Often, a comment such as "you said ten 'you knows' in a five minute span" will suffice to make speakers aware of the problems they exhibit. From there, it is up to them to replace those words with meaningful ones by self-awareness and discipline.

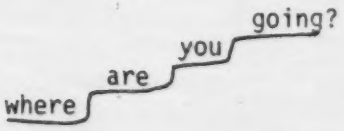
For the sub-category "pause" a review of sentence structure and syntactical rules might be helpful to reinforce the speaker's knowledge of the places where a pause is or is not correct.

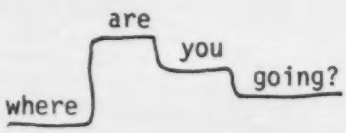
Two of the more challenging categories with which to offer help are "meaning stress" and "word accent." For word accent problems, an exercise developed by the one of the writers for use in his basic Voice and Diction course that is reproduced below, has been helpful for speakers to practice.

INSTRUCTIONS: Emphasize each of the words in the following sentences as underlined. Different meanings will accrue if properly performed.

Today is a hot day. (not yesterday, not tomorrow)
Today is a hot day. (positively so--no doubt about it)
Today is a hot day. (not a cold one)
Today is a hot day. (not a hot night)

For meaning stress problems, diagramming sentences where the proper intonation will be given for questions has been helpful. Some examples of this diagramming are as follows:





With repeated practice, any speaker should be able to differentiate between simple declarative statements, exclamatory sentences, and interrogative questions. The concept of diagramming sentences for meaning stress is fully developed by Gordon (1972).

The following generalizations are helpful in alleviating problems of meaning stress. They are taken from Eisenson (1974, pp. 101-02).

Generalizations Relative to Intonation and Inflectional Changes

(1) Pitch changes to some degree are almost continuous in normal conversational speech.
(2) Major pitch changes occur at the end of phrases and sentences and on the most significant words within the phrase or sentence.
(3) Falling or downward inflections are used when we make definite or positive assertions and when we wish to indicate the completion of a thought. A falling inflection is also used on the final word of a question that begins with an interrogative word.
(4) A rising inflection is used to suggest incomplete or dependent thoughts and to express doubt or uncertainty. The rising inflection is also used in questions that may be logically answered by the words "Yes" or "No."
(5) The pitch level of the most important word within a phrase or unit of thought is likely to be at a different level from the other words of the unit. Most frequently, it will be higher in level, but occasionally the emphasized word may be uttered at a distinctively lower level than the other words of the unit.
(6) The stressed syllable of a word is usually spoken on a higher pitch level than the unstressed syllable or syllables of the word.

Pronunciation

Problems with dropped syllables and overall production of a word are important ones with which to deal. Analysts should be very careful when dealing with this category not to move from one extreme to another. The subject who needs help is already dropping or not producing syllables, accenting syllables incorrectly, or choosing sounds for specific syllables incorrectly. When one begins working on these problems, there is a tendency to over-exaggerate the suggested solutions. That is, if the initial syllables of a series of words is constantly dropped, subjects will naturally practice emphasizing that syllable. Hence, "because" becomes "because" and the speech is actually worse than when it started. The speech has become pedantically stilted and even obtrusive to listen to. The rule that analysts should follow in recommending work for speakers is this--practice the sounds and problems in exaggeration only so far as the correct sounds become a part of the subject's daily speech and the problems are alleviated. In the drill session the goal of correcting speech habits is not to allow the corrected sounds to take over the individual's speech so much that all natrualness is lost.

Dropped and slurred syllables are usually associated with rate problems. Have the subjects repeat a number of sentences several times until each syllable is clearly articulated but so that it is still natural sounding. Tongue-twisters are especially good for this. Consult the bibliography of this manual for sources containg additional exercises, including tongue-twisters.

Physical Critique

Problems associated with physical manifestations are many in number and are often the cause of the speech problems that have been discussed in various sections of this manual. While there is not space to provide an in-depth examination of these physical manifestations, an attempt will be made to provide exercises by which analysts may aid speakers with specific problems.

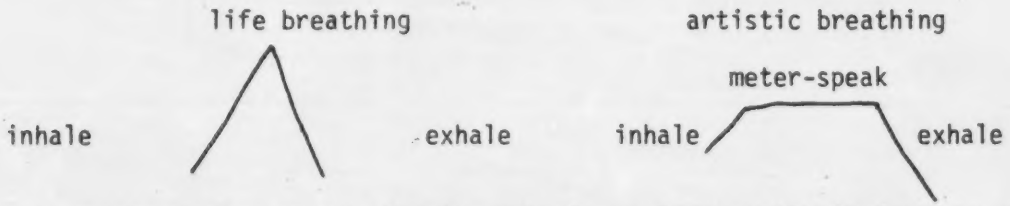
The two sub-categories that deal specifically with facial movement are "upper lip movement" and "lower jaw movement." As described in an earlier chapter, these categories are usually associated with the fact that an individual subject is not aligning the facial features with enough precision in order that sounds are properly differentiated. Arthur Lessac, in his monumental work, The Use and Training of the Human Voice (1967), explored different facial movements for vowel sounds, the most important movements of which have been reproduced here.

I.P.A. Symbol	Description	Examples
/a/	largest lip opening	(alms, remarkable)
/ɔ/	maximum opening for maximum forward stretch	(odd, beyond)
/ɔ/	keystone position - thumb size	(all normal)
/u/	smallest lip opening	(ooze, school)

/aʊ/	largest lip opening, followed by smallest	(ounce, south)
/æ/	slightly widened lip opening; tongue tip firmly against lower teeth	(add, half)

The reader is referred to other sections in the Lessac text for structural action exercises that will help the subject practice the different movements necessary to produce the various sounds. (See pp. 56-78) One primary theme that runs throughout the text, as well as several others, is the fact that the mouth must be opened in order to have good sound production. If a particular subject seems to mumble and sounds are not enunciated clearly, there is a good chance the oral cavity is not being opened to the extent needed to produce particular sounds, thus resulting in careless and lazy speech.

Another crucial area under physical critique that deserves special consideration is the sub-category "breathing." There are basically two types of breathing that are represented in the diagram below. The type labeled "life breathing is done automatically and subconsciously. This is the type of breathing that we do in normal, daily situations. Clearly, we do not think to take a breath each time that one is needed in daily surroundings. The second type of breathing that is illustrated is called "artistic breathing" and is the type of breathing pattern used by human beings in either singing or speaking. In this kind of breathing, man has control over the amount of breath taken and the amount of time needed to expel that breath. The following diagram should clarify the previously discussed concept:



Subjects who exhibit breath control problems should be interested in some of the following exercises adapted from Basic Voice Training for Speech by Hahn, Lomas, Hargis, and Vandraegen (1957).

1. Place the open palms of your hands tightly against your lower front ribs. Inhale slowly and deeply through both mouth and nose, feeling the push of the lower rib wall against your hands. Hold the breath for about five counts, noting that your ribs are held up and out. Now exhale slowly, pressing in with your hands but resisting this pressure by the slow lowering of the ribs. Turn your hands so that the fingers point toward the back; the open palms can now feel the rib movement of the side and back of the rib cage. Repeat the slow inhalation, the holding, and the steady exhalation until you are well aware of the desired movement.

2. With your open palms against the ribs, inhale quickly through your mouth, purse your lips, and blow a steady, forceful stream of air, as if you were trying to blow out a candle some distance from you. Continue blowing until most of your breath is exhausted; feel the inward movement of the abdominal wall and the gradual lowering of the ribs. Try this also with an actual candle, this time, blowing evenly, with little force, so that the flame is merely made to bend steadily away from you but is not extinguished and does not waver.

3. With the palms of your hands on the lower ribs, and your tongue tip behind the lower front teeth, yawn gently as you inhale; exhale slowly and steadily as your produce the long /i/ sound. Inhale quickly and somewhat more deeply; exhale with more vigorous pressure at the central region of the body. Repeat a third time, being conscious of even greater muscular contraction. The last /i/ will be energetic and short, and should easily reach across a large room without straining your throat muscles. Your mouth, of course, should be sufficiently open to permit the sound to escape without being muffled.

In addition, speakers should be aware of the various physical varieties of breathing. There are basically three types: clavicular, upper thoracic, and diaphragmatic. Clavicular breathing is a type of breathing pattern that employs the raising and lowering of the shoulders and collarbone for each breath. Not only does this method rarely provide a good, full breath for speech; it also is very tiring for a speaker who prolongs its use. Upper thoracic breathing is a type of breathing pattern that a speaker who exhibits audible gasping during his or her speech is likely to employ. An upper thoracic breath is neither a deep nor a full one, and therefore to compensate for the lack of reserve air, the speaker sounds and looks as if he is "panting." Some sort of chest movement would be noticeable in upper thoracic breathing.

The most desirable type of breathing pattern that analysts should try to encourage speakers to use is the diaphragmatic variety. Speakers who learn to control the diaphragm and who take full breaths will not only find that they have greater reserve volume, but also, as Anderson (1942) points out: "(1) a maximum movement of air with a minimum of effort; (2) an inhalation that can be accomplished quickly and silently; (3) a sensitive and responsive control over the outgoing breath; and (4) a minimum of interference with the voice-producing mechanism in the throat" (p. 27).

Overall, the processes of breathing are extremely vital to clear production of sound and speech. Indeed, problems with these processes underlie most of the other problems that speakers are likely to possess in their normal speech patterns. Analysts are encouraged to explore the many different exercises concerning breathing that are available in the voice and diction textbooks listed in the bibliography.

The last sub-category to be discussed in this section is posture, which is important in both breathing and total sound production. Lessac (1967, p. 28) provides fifteen checks for effective posture. This list is so valuable that the writers have decided to reproduce it in full.

1. Crown of the head is the highest part of the body.
2. Head in easy swiveling position.
3. Chin is level--never raised.
4. Back of neck extended upward.
5. Front of neck always loose--never stretched.
6. Shoulders sloping and somewhat forward.
7. Entire back expanded; with maximum space between shoulder blades.
8. Spine, with slight convex curver, in easy contact with wall from pelvis to upper back.
9. Overall chest cavity expanded.
10. Pelvis rocked forward; abdominal wall curves inward and upward as part of the forward movement.
11. Hands fall a bit in front of the thighs.
12. Thighs forward and loose.
13. Knees always unlocked and loose.
14. Calf muscles loose.
15. Heels against wall; body resting lightly on both heels and soles.

The analyst is encouraged to explore the many different remediational tools available to correct physical speech features and phenomena.

Loudness

No one could doubt that breathing and volume are very inter-related. If a person is going to exhibit adequate volume, he must also possess the ability to bring about enough force for projection in terms of expelled air. Several good exercises are presented to increase or enhance the level of volume a speaker can reach:

1. Count from one to ten, steadily increasing the pressure of the muscles of exhalation, so that the numbers become progressively louder. When ten is reached, count backwards lowering the degree of loudness for each number.

2. Place yourself in a ficticious outdoor situation in which you are forced to project your voice. Make up approximately four to six lines in which you can control breath, rate, and volume appropriately.

3. Repeat short phrases, such as "I know," "I will," and "I can" using three degrees of loudness for each. Imagine that you are talking to listeners at different distances.

One major problem with loudness in many people is that they cannot adjust the intensity of volume according to a particular situation. Hence someone may talk to a friend seated next to him or herself as if he or she were six blocks away, or a teacher may address a classroom full of students and only be heard in the front two rows. Both of these situations can be avoided by knowledge and proper practice of the volume needed in a situational-environmental context. In addition, speakers with habitually loud voices should have their hearing tested.

Another major problem associated with loudness is the fading of sound at the end of sentences or thoutht patterns. Speakers with fading problems should concentrate on breathing exercises that emphasize the control and sustaining of expelled air.

Voice Quality

Space does not permit a full-blown discussion of each of the different voice qualities that make up the sub-categories of the evaluative instrument included in the appendix section of this manual. Indeed, some of the sub-categories such as "breathy" and "muffled" have already been alluded to, though not directly dealt with, in other sections such as breathing and physical critique.

Fortunately, it is possible to group the remaining sub-categories into two major areas--tenseness and nasality. While not all of the sub-categories are defined as tense, they all have the common underlying factor of resonance. Resonance is the vocal attribute that gives the full, rich tones that the voice needs to keep it from being flat and listless. The five sub-categories labeled "harsh," "hoarse," "vocal fry," "throaty," and "strident" all have an unpleasant tone to them. The physiological reasoning underlying each of the labels has been discussed previously. To reiterate for two of the phenomena, a strident voice is one with a harsh, sharp, whining quality that is caused by excessive tension in the laryngo-pharynx producing overtones that are not dampened by the muscles of the soft palate. A throaty voice is produced whent the laryngo-pharynx is constricted and the back of the tongue crowds into the throat. Clearly the key to alleviating problems with these five sub-categories lies in the fact that the throat muscles must be relaxed so that a normal, pleasant tone may be emitted.

The following exercises are excellent for alleviating throat tension, and have been adapted from Hahn, Lomas, Hargis, and Vandraegen (1957); pp. 70-71.

1. Hold head upright. Relax the muscles holding it and let it fall forward with the chin touching the chest. Be sure that it is falling forward of its own weight and that you are not pulling it forward. Repeat this several times.

2. Let the head fall forward as in exercise one, and then rotate it slowly and with as little muscular effort as possible up to the right shoulder. Now let the head fall backward and then rotate it forward over the left shoulder, letting it fall forward again. See that the jaw drops open of its own weight as the head falls back. As you rotate the head backward, inhale. Exhale as the head moves forward. Repeat this slowly: reverse the direction and do it several times more.

3. Relax the jaw by letting it fall open of its own weight as the head is held upright. Be certain that you are not pulling the jaw down, but letting it fall. Close the mouth and repeat the exercise several times, getting the feeling of relaxation in the jaw muscles as the mouth falls open.

4. Repeat the syllable SUH /sʌ/, keeping the tongue relaxed and letting the relaxed jaw fall open after the consonant sound. Repeat this several times.

5. Take a deep breath; by relaxing as completely as possible, let out a deep sigh. Try to let the muscles of the throat and mouth go as you release the air. Feel that those muscles are relaxed. Repeat this several times and then vocalize an easy, soft AH /ɑ/ sound as you sigh. Try for pure tone without increased tension. Repeat this exercise several times, using the vowel tones OH /o/. AW /ɔ/, OO /u/, and EE /i/.

Nasality and denasality are different cases from throat tension, however. As discussed earlier, we say that someone has nasalized speech if nasal resonance appears on any sound other than /m/, /n/, or /ŋ/. We say that someone has denasalized speech if those three sounds are not produced with nasal resonance. (The problem with nasality is that the resonance that belongs on the three sounds only is carried over into other sounds in a word in which one of the three sounds appears. There can also be excessive nasality in a person's speech in general, regardless of whether there are nasal sounds present in the words or not.) Speakers with excessive nasality should practice the following sentences and be able to speak them without nasal resonance. Notice that none of the sentences contain nasal sounds.

1. He was awake at five o'clock.
2. He walked to the store and asked for cigarettes.
3. They hurriedly left for the gold fields.
4. Be sure to go to bed early.
5. This is the house that Jack built.
6. Today is the last day to go to the Catskills.

Another helpful exercise to eliminate nasality is to have speakers repeat each of the following words slowly, and then have them repeat each quickly, giving full value to each of the nasal sounds, but eliminating nasality from the surrounding vowel sounds. Nasal resonance also increases when the jaw is tight and arbitrary movement is restricted.

Speakers should open their mouths.

am, time, gone, sang, fine, dance, seem, soon, song, moon, mat, gnat, neat, singing, finger, can, ram, ran, rang, ten, met, fame, rain, length, land, friend, spend, lame, mean

Nasality may be the most frustrating experience for a subject attempting to improve his speech habits. With continued practice, however, there is no reason that the problem could not be alleviated or minimized.

Pitch

When discussing pitch, there are two important terms that should be differentiated. First is called an individual's optimum pitch. Optimum pitch is the level of pitch at which an individual's vocal mechanism functions best. At this level, one could expect the purest and richest tones as well as a great deal of speaker comfort. The second level is called an individual's habitual pitch. This is the pitch at which an individual will normally speak. Clearly, not everyone speaks at their optimum pitch level. The reason for this is sometimes due to the situational contexts in which a person is involved; as physical and mental conditions change, pitch level also changes.

This chapter will not concern itself with the determination of an individual's optimum and habitual pitch. Indeed, methods of finding those levels are well articulated in many voice and diction textbooks. A particularly good discussion may be found in Eisenson (1974). Several exercises, however, are helpful in alleviating narrow range, monotone, repeated patterns and pitch breaks. The following is a sample adapted from Hahn, Lomas, Hargis, and Vandraegen (1957):

1. Beginning at your lowest comfortable pitch, intone the sound OH /oʊ/. Glide up to your highest comfortable pitch, take a breath and glide down again. Listen to yourself to see if there are any breaks in pitch level, Repeat several times, trying to extend the range in both directions, but do not strain.

2. Chant the vowel sound /ɑ/ in steps through the middle octave of your speaking range, from the lowest to the highest tone, taking a fresh breath on each pitch. Hold each tone for a duration of three seconds. Repeat with /o/, /u/, /i/, and /ɔ/.

3. Using a piano, determine the full extent of your pitch range by repeating notes beginning as low as possible to notes as high as possible. Do you have the normal 1-1 1/2 octave range?

4. Explore the full limits of your pitch range by reading these sentences in a monotone, with a limited pitch range, and with the widest possible range.

I don't think it is possible for me to go to the game next week.
I don't think my voice is pitched too high, do you?
The midterm exam didn't cover all of the material presented in class.
I worked for over a month this summer, but didn't make much money.
How do you arrange for tickets when more than one airline is involved?

Rate

A great deal of what this chapter could say about rate has already been covered in other sections of this manual. If a speaker takes the time required to produce the sounds properly and each syllable is distinct, it follows that rate will be adjusted accordingly. Perhaps the major problem with rate still to be discussed is in terms of phrasing and groping. Listen very carefully to each speaker's voice in the reading selections for both of these problems. If they both occur while reading, it would appear that help outside of general speech is in order, as the problem may extend beyond mere vocal qualities. If however, the problem is only apparent in conversation, a short course in impromtu or extemporaneous speaking would be helpful. Refer to a basic text or selected pasages used in an Oral Interpretation course for exercises.

Dialect

As mentioned earlier, an analyst must exercise caution when attempting to deal with an individual's dialect. For years, schools have been training children in one type of "standard" dialect. Today, such an approach is outmoded, as many different kinds of cultural and regional patterns of speaking and grammar are taught and being recognized as acceptable. One general guideline should follow for attempting to correct dialect: determine the situational demand placed upon the individual. If a particular person's dialect is effective for him in his present surroundings, and there is little chance that that person will relocate to an area of a different dialect, then the argument that the individual's dialect needs to be adjusted to a "standard" diminishes considerably in strength. However, if there is the slightest chance that the individual will come into extensive contact with different dialectal patterns, then every effort should be made to expose that person to different dialects. This does not mean that the person needs to change all of his speech patterns to fit one particular dialect, but simply that the individual should understand an be understood in other dialectal communities.

Overall, this chapter has just scratched the surface of the many possible exercises that are available for remediation programs. We want to emphasize that an analyst's duties do not begin and end with the mere identification of an individual's speech habits. If there are any areas that are isolated as difficulties for a speaker, it would appear that only by offering means by which a speaker may alleviate those problems has the analysis truly accomplished something worthwhile.

QUESTIONS FOR STUDY

1. Why would one say that a study of speech habits that does not recommend improvement based on its findings "unhumanistic?" Do you agree with the stand taken in this chapter? Argue from both an analyst's and a subject's perspective.

2. Make a list of those basic voice and diction textbooks and drill-books that seem to have the most helpful drills for each of the categories delineated in the chapter. What distinctive features of each book seem to make the book particularly attractive for the particular category for which it was chosen?

References

Those references marked with a star (*) are especially good sources for remediation and improvement materials.

*Anderson, Virgil A. Training the Speaking Voice. New York: Oxford University Press, 1942.

Blunt, Jerry. Stage Dialects. New York: Chandler Publishing Company, 1967.

*DeVito, Joseph A., Jill Giattino, and T. D. Schon. Articulation and Voice: Effective Communication. New York: Bobbs-Merrill, 1975.

Duker, Sam, "Goals of Teaching Listening Skills in the Elementary School," Elementary English, 38 (March, 1961), 170-74.

Eisenson, Jon and Mardel Ogilvie. Speech Correction in the Schools, third edition. New York: Macmillan Company, 1971.

Eisenson, Jon. Voice and Diction, third edition. New York: Macmillan Company, 1974.

*Fairbanks, Grant. Voice and Articulation Drillbook, second edition. New York: Harper and Row, 1960.

Fogel, Daniel S., Lucy G. Wilmeth, and Karl J. Krayer. "The Prediction of Speech Habits of Prospective Teachers." Unpublished Manuscript, University of Houston, 1977.

*Gordon, Morton J. Speech Improvement. Englewood Cliffs, New Jersey: Prentice-Hall, 1974.

Gunning, Robert, The Technique of Clear Writing. New York: McGraw-Hill, 1968.

*Hahn, Elise, Charles W. Lomas, Donald E. Hargis, and Daniel Vandraegen. Basic Voice Training for Speech, second edition. New York: McGraw-Hill, 1957.

Herman, Lewis and Marguerite S. Herman. Foreign Dialects. New York: Theatre Arts Books, 1943.

Lapin, Lawrence. Statistics: Meaning and Method. New York: Harcourt Brace Jovanovich, 1975.

*Lessac, Arthur. The Use and Training of the Human Voice, second edition. New York: Drama Book Specialists, 1967.

*McCabe, Bernard P. Communicative Voice and Articulation. Boston: Holbrook Press, 1970.

*Moncur, John P. and Harrison M. Karr. Developing Your Speaking Voice, second edition. New York: Harper and Row, 1972.

Nichols, Ralph G. "Do We Know How to Listen? Practical Helps in a Modern Age," Speech Teacher, 10 (March, 1961), 118-124.

Nichols, Ralph G. "Factors in Listening Comprehension," Speech Monographs, 15 (1948), 154-63.

Nichols, Ralph G. and Paul H. Cashman. "The Approval Factor in Listening," Education, 80 (January, 1960), 268-71.

Palmer, John M. Anatomy for Speech and Hearing, second edition. New York: Harper and Row 1972.

*Rizzo, Raymond. The Voice as an Instrument, second edition. Indianapolis: Bobbs-Merrill, 1978.

Skinner, Paul H. and Ralph L. Shelton, Speech, Language, and Hearing: Normal Processes and Disorders. Reading, Massachusetts: Addison-Wesley Publishing Company, 1978.

Taylor, Stanford E. Listening. Washington, D.C.: National Education Association of the United States, 1964.

Wolff, Peter and Joyce Gustein. "Effects of Induced Motor Gestures on Vocal Output." Journal of Communication, 22 (September, 1972), 277-88.

Wolfram, Walt and Ralph W. Fasold. The Study of Social Dialects in American English. Englewood Cliffs, New Jersey: Prentice-Hall, 1974.

Van Riper, Charles and Dorothy Edna Smith. An Introduction to General American Phonetics, second edition. New York: Harper and Row, 1954.

APPENDIX A

RATING FORM

I.	Consonants	1 2 3 4 5
	Initial, Medial, Final (identify if problem) Misproduction (identify if problem)	
II.	Vowels	1 2 3 4 5
	Initial, Medial, and Final (identify if problem) Misproduction (identify if problem)	
III.	Suprasegmental Features	1 2 3 4 5
	Pause (identify placement) Word accent Added sounds (identify sound) Added words (identify word) Meaning stress	
IV.	Pronunciation	1 2 3 4 5
	Initial, Medial, Final Syllables Other (identify if problem)	
V.	Physical Critique	1 2 3 4 5
	Upper lip movement Lower jaw movement Throat Tension Breathing Posture Gesture Other (identify if problem)	
VI.	Loudness	1 2 3 4 5
	Too Loud, Too Soft, Fading	
VII.	Voice Quality	1 2 3 4 5
	Harsh, Hoarse, Vocal Fry, Breathy, Throaty, Glottal attack, Nasality, Denasality, Strident, Muffled	
VIII.	Pitch	1 2 3 4 5
	High, Low, Narrow Range, Monotone, Repeated Patterns, Break	
IX.	Rate	1 2 3 4 5
	Too fast, Too slow, Poor Phrasing	

X. Dialect 1 2 3 4 5

Acceptable, Pronounced (identify particulars)

XI. Individual or Isolated Deficiencies or Problems

(identify if present) 1 2 3 4 5

5 - Excellent
4 - Acceptable
3 - Fair
2 - Weak
1 - Major difficulty

APPENDIX B

INTERNATIONAL PHONETIC ALPHABET

vowels

/ e /	ache, cha otic	/ ɔ /	ought, orb
/æ/	fat, ham	/ɔɪ/	noise, oil
/ i /	meet, eve	/ u /	food, ooze
/ ɪ /	depend, habit	/ʊ/	book, took
/ ɚ/	maker, tracer	/aʊ/	out, thou
/ ɝ /	early, infer	/ ju/	use, cute
/aɪ/	ice, sight	/ ʌ /	up, cup
/ o /	old, vote, boat	/ ə /	infant, drama
/ ɛ /	end, get	/ ɑ /	army, father
		/ ɒ /	odd, soft

consonants

/ p /	pear, plight	/ S /	show, machine
/ b /	bear, brought	/ʒ /	garage, azure
/ t /	ten, net	/ tS/	cherry, cheeze
/ d /	dear, dove	/dʒ/	June, major
/ k /	cake, kangaroo	/ h /	hat, haven
/ g /	green, go	/ m /	move, merry
/ f /	free, phantom	/ n /	never, know
/ v /	Vermont, vase	/ ŋ/	going, leaving
/ϴ/	thrice, Kathy	/ l /	leave, glass
/ð/	them, those	/w/	woe, wafer
/ s /	sew, circus	/ hw/	which, awhile
/ z /	zoo, players	/ j /	yellow, yonder
		/ r /	race, rover

APPENDIX C

SAMPLE INTERVIEW QUESTIONS*

What is your name?

How are you classified at the university?

What do you wish to specialize in?

Are members of your family in teaching?

Why do you want to become a teacher?

Based on your own classroom experiences, what do you consider characteristics of a model teacher?

Do you feel that you have had a good education up to this point?

Tell me a little about your current family life. Are you married? Do you have children?

Do you work? Full or part time?

How does your family life now affect your education?

Tell me a little about the family in which you grew up.

If you had to place a description of your formative years in your family life on a continuum including "very strict," "strict," "lax," or "very lax," where would you place your description?

How many children were in your family?

Where were you (age-wise) in relation to the other children?

As far as location goes, was your family resonable stable?

What was the educational background of your family?

Where did your Mother and Father grow up?

Did you participate in extracurricular activities in high school?

What is your goal in life? Do you feel that this is what you are now working toward?

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* This interview form was used by questioners in the Spring, 1977 study conducted at the University of Houston. The study is described in detail in "The Prediction of Speech Habits of Prospective Teachers" (Fogel, Wilmeth, Krayer, 1977).

Who was your favorite teacher? What level and subject did that teacher teach?

Who is the best teacher that you have ever had? What things cause you to label him or her as best?

What are some of your friends majoring in?

What grade level do you wish to teach?

Have you ever been around a large group of children at that grade level?

APPENDIX D

"DIAGNOSTIC PASSAGE"

Let me tell you, my friend, that when students from other countries

G.A. [ɪɛt mi tɛl ju/maɪ frɛnd/ ðæt hwɛn studants fram ʌðə kʌntrɪz

Black [ɪɛ mɪ tɛ jə/ma fɛn/ dæt wɪn stuants fəm ədə kʌntɪz

Chicano [ɪɛt mi tɛl ju maɪ frɛnd/ dæt win studants frɔm ədə kɔntrɪs

come to study in the United States, their classes are certainly not

G.A. kʌm tu stʌdɪ ɪn ðə junaɪtɪd stets/ ðɛr klæsɪz ar sɜ̈tn̩lɪ nat

Black kʌm tə stʌdɪ ɪn də janaɪste/ dɛr klæsɪz a sɜ̈tənlɪ nat

Chicano kɔm tu stɔdɪ ɪn də junaɪtɪd stets/ dɛr klæsis ar sɜ̈tənlɪ nat

their only job--are they? For a little while the problems of adjust-

G.A. ðɛr onlɪ dʒab/ar ðe‖ fɔr ə lɪt! hwaɪl ðə prabləmz əv ədʒʌstmənt

Black dɛ onɪ dʒab/a de‖ fɔ ə lɪl wal də pabləm ə ədʒʌsmən

Chicano dɛr onlɪ ʒab/ar de‖ fɔr ə lɪt! waɪl də prɔbləmz əv əʒʌsmənt

ment to the new environment may make it impossible to devote very much

G.A. tu ðə nu ɛnvaɪrənmənt me mek ɪt ɪmpasɪb! tu dɪvot vɛrɪ mʌtʃ

Black tu də nu ɛnvaɪəmən me mek ət ɪmpasəbə tə dəvot vɛɪ mʌʃ

Chicano tu də nu ɛnvaɪrənmənt me mek it impɔsibəl tu divot vɛrɪ

thought to school work. The recently arrived student must find out

G.A. θɔt tu sku! wɜ̈k‖ ðə risəntlɪ əraɪvd studənt mʌst faɪnd aʊt

Black θɔt tu sku wɜ̈k‖ də risənlɪ əraɪv stuən mʌs fan aʊ

Chicano mɔʃ tɔt tu sku! wɜ̈k‖ də risənlɪ əraɪvd studənt mɔst faɪndaʊt

for himself the answers to many questions. Shall he change the customs

G.A. fɔr hɪmsɛlf ðə ænsəz tu mɛnɪ kwɛstʃənz‖ ʃæl hi tʃendʒ ðə kʌstəmz

Black fɔ hɪmsɛf də ænsəz tu mɪnɪ kwɛstʃənz‖ ʃæ hɪ tʃendʒ də kʌstəm

Chicano fɔr himsɛlf də ɛnsəs tu mɛnɪ kwɛʃəns‖ ʃɛl hi ʃentʃ də kɔstəms

*(appendix D & E)
The G.A. transcrintion is done in an exact, formal manner. Few speakers would be so exact in their actual production. Assimilation during production would negate some of the actual "word for word" transcription used here, but, in isolation, each word would be correct.

he has always followed in eating his three full meals each day? What

G.A. hi hæz ɔlwez fɔlod ɪn itɪŋ hɪz θri fʊl milz itʃ de‖ hwat

Black hɪ hæz ɔwez fɔlo ɪn idɪŋ hɪz θri fʊ mɪz itʃ de‖ wa

Chicano hi hæes ɔlwes fɔlɔ in itɪn his θri fʊl mils iʃ de‖ wat

clothing should he choose? Should he wear those wretched blue jeans

G.A. kloðɪŋ ʃʊd hi tʃuz‖ ʃʊd hi wer ðoz rɛtʃɪd blu dʒinz

Black klodɪŋ ʃʊdi tʃuz‖ ʃʊdi wɛr doz rɛtʃt bu dʒin

Chicano klosɪŋ ʃʊd hi ʃus‖ ʃʊd hi wɛr dos rɛʃt blu dʒins

the boys here have, or should he cling to the coats and ties he has

G.A. ðə bɔɪz hɪr hæv| ɔr ʃʊd hi klɪŋ tu ðə kots ænd taɪz hi hæz

Black də bɔz hɪ hæv| ɔ ʃʊdi klɪŋ tu də kots æn taz hɪ hæz

Chicano də bɔs hir hæv| ɔr ʃʊd hi klɪŋ tu də kots ænd taɪs hi hæs

always preferred at home? He is inclined to feel admiration for the

G.A. ɔlwez prɪfɜ̈d æt hom‖ hi ɪz ɪnklaɪnd tu fil ædmɪreʃən fɔr ðə

Black awez prɪf3d æd hom‖ hi ɪz ɪnklan tu fil ædmeʃən fɔ də

Chicano ɔlwes prifəd æt hom‖ his inklaɪn tu fil ædmireʃən fɔrdə

scale of living, the big yards, the well-kept houses, and the good

G.A. skel əv lɪvɪŋ| ðə bɪg jardz| ðə wɛl kɛpt haʊzɪz| ænd ðə gʊd

Black skɛl ə lɪvɪn| də bɪg jadz| də wɛ kep haʊsɪz| ænd də gʊ

Chicano skel əv livɪn| də big jards| də wɛl kɛpt haʊsɪs| ænd də gʊ

educational equipment. But he doesn't understand how everyone can

G.A. ɛdʒəkeʃən! ɪkwɪpmənt‖ bʌt hi dɪzənt ʌndəstænd haʊ ɛvrɪwən

Black ɛʒəkeʃnə kwɪpmən‖ bʌt hɪ dʌdən ʌnəstæn haʊ ɛvɪwən

Chicano ɛʒʊkeʃən! əkwɪpmənt‖ but hi dɔzənt ɔnərstæn haʊ ɛvrɪwɔn

be in such a hurry, as if time were a god to be worshiped.

G.A. kæn bi ɪn sʌtʃ ə hɜ̈ɪ| æz ɪf taɪm wɜ̈ ə gad tu bi wɜ̈ʃɪpt‖

Black kən bɪ ɪn sʌʃ ə h3ɪ| æz ɪf taɪm w3 ə gad tu bɪ w3ʃɪp‖

Chicano kæn bi in sɔʃ ə hɜ̈ɪ| æs if taɪm wɜ̈ ə gɔd tu bi wɜ̈ʃɪpt‖

APPENDIX E

"THE RAINBOW PASSAGE"
(adapted)

When the sunlight strikes raindrops in the air, they act like a prism

G.A. [hwɛn ɣə sʌnlaɪt straɪks rendraps ɪn ɣə ɛr|ɣe ækt laɪk ə prɪzm̩

Black [wɪn də sʌnlat strak rendɔp ɪn də ɛ|de ækt lak ə pɪzm̩

Chicano [win də sɔnlaɪt straɪks rendrɔps ɪn dəɛjə|də ækt laɪk ə prism̩

and form a rainbow. The rainbow is a division of white light into

G.A. ænd fɔrm ə renbo|| ɣə renbo ɪz ə dɪvɪʒən əv hwaɪt laɪt ɪntu

Black ən fɔm ə renbo|| ɣə renbo ɪz ə dɪvɪʒən əv wat lat ɪntu

Chicano æn fɔrm ə renbo|| də renbo is ə dɪviʃən əv waɪt laɪt ɪntə

many beautiful colors. These take the shape of a long round arch with

G.A. mɛnɪ bjutɪfəl kʌlərz|| ɣiz tek ɣə ʃep əv ə lɔŋ raʊnd artʃ wɪθ

Black mɪnɪ bjutəfəl kʌləz|| ɣiz tek də ʃep ə ə lɔŋ raʊnd atʃ wɪf

Chicano mɛnɪ bɪjutɪfʊəl kɔlərs|| dis tek tə ʃep əv ə lɔŋ raʊn arʃwis

its path high above, and its two ends apparently beyond the horizon.

G.A. ɪts pæθ haɪ əbʌv|ænd ɪts tu ɛndz əpɛrəntlɪ bɪjand ɣə

Black ɪts pæθ ha əbʌv|ən ɪt tu ɪŋ əpɛənlɪ bɪjɔn də

Chicano ɪs pæs haɪ əbɔv|æn ɪs tu ɛns əpɛrəntlɪ bɪjɔn də

There is, according to legend, a boiling pot of gold at one end.

G.A. hɔraɪzən|| ɣɛr ɪz|əkɔrdɪŋ tu lɛdʒənd|ə bɔɪlɪŋ pat əv gold æt

Black hərazən|| ɣɛr ɪz|əkɔdɪn tə lɛdʒən|ə bɔlɪŋ pat əv gol æt

Chicano hɔrəzən|| dɛr ɪs|əkɔrdɪn tu lɛtʃən|ə bɔɪlɪn pat əv gol æt

People look, but no one ever finds it. When a man looks for something

G.A. wʌn ɛnd|| pip! lʊk|bʌt no wʌn ɛvə faɪndz ɪt||hwɛn ə mæn lʊks

Black wʌn ɪn|| pipə lʊk|bʌt no wʌn ɛvə fandz ɪt||hwɪn ə mæn lʊk

Chicano wʌn in|| pipəl lʊk|bɔt no wɔn ɛvə faɪnds it|| win ə mɛn lʊks

beyond his reach, his friends say he is looking for a pot of gold at

G.A. fɔr sʌmpɐɪŋ bɪjand hɪz rɪtʃ| hɪz frɛndz se hiɪz lʊkɪŋ fɔr ə pat əv

Black fɔ sʌmpɪn bɪjɔn hɪz rɪtʃ| hɪz frɪnz se hi ɪz lʊkin fɔ ə pat ə

Chicano fɔr sɔmpɪn bɪjɔn his rɪʃ | his frɪns se his lʊkɪn fʃ ə pat əv

the end of the rainbow. Throughout the centuries men have explained

G.A. gold æt ðə ɛnd əv ðə renbo|| ɵruaʊt ðə sɛntʃərɪz mɛn hæv ɛksplend

Black gol æ də ɪn ə də renbo|| ɵruaʊ də sɪntʃɪz mɪn hæv splen

Chicano gol æt də ɪn əv də renbo|| fruaʊt də sɪntʃərɪz mɪn hæv ɛsplen

the rainbow in various ways. Aristotle thought that the rainbow was

G.A. ðə renbo ɪn vɛrɪəs wez|| ɛrɪstat! ɵɔt ðæt ðə renbo waz

Black də renbo ɪn vɛjəs wez|| ɛəstat! fɔt də renbo wʌz

Chicano də renbo ɪn vɛrɪəs wes|| ɛrɪstɔt! tɔt də renbo was

caused by reflection of the sun's rays by the rain. Since then,

G.A. kɔzd baɪ rɪflɛkʃən əv ðə sʌnz rez baɪ ðə ren|| sɪns ðɛn|

Black kɔz ba rɪfɛkʃən ə də sʌn rez ba də ren|| sɪns dɛn|

Cicano kɔst baɪ rɪflɛkʃən əv də sɔns res baɪdə ren|| sɪns dɛn|

physicists have found that it is not reflection, but refraction by

G.A. fɪzɪsɪsts hæv faʊnd ðæt ɪt ɪz nat rɪflɛkʃən| bʌt rɪfrækʃən

Black fɪzɪst hæv faʊn dæet ɪt ɪz nat rɪfɛkʃən| bʌt rɪfækʃən

Chicano fɪsɪsits hæ faʊn dæet its nat rɪflɛkʃən | bɔt rɪfrɛkʃən

the raindrops which causes the rainbow. Many complicated ideas about

G.A. baɪ ðə rendraps hwɪtʃ kɔzɪz ðə renbo|| mɛnɪ kamplɪketɪd

Black ba də rendaps wɪtʃ kɔz də renbo|| mɪnɪ kɔmpəketɪ

Chicano baɪ də rendrɔps wiʃ kɔsɪs də renbo|| mɪnɪ kɔmpləketɪd

the rainbow have been formed. The difference in the rainbow depends

G.A. aɪdiəz əbaʊt ðə renbo hæv bɪn fɔrmd|| ðə dɪfrənz ɪn ðə renbo

Black adiəz baʊt də renbo hæv bɪn fɔm|| ðə dɪfəns ɪn də renbo

Chicano aɪdiəs əbaʊ də renbo hæf bin fɔrmd||də dɪfrəns in də renbo

considerably upon the size of the water drops, and the width of the

G.A. dɪpɛndz kənsɪdərəblɪ əpan ðə saɪz əv ðə wɔtɚ draps/ænd ðə

Black dəpɪn kənsɪdəbɪ əpan də saz ə də wadə dap/æn də

Chicano dɨpɛns kənsidrəblɪ ɔpan də saɪs əf də wɔtɚ draps/æn də

colored band increases as the size of the drops increase.

G.A. wɪdə əv ðə kʌlərd bænd ɪnkrisɪz æz ðə saɪz əv ðə draps ɪnkris‖

Black wɪf ə də kʌlə bæn ɪnkisɪs æz də saz əv də dap ɪnkris‖

Chicano wɪt ə də kɔlɔrd bæn inkrisɪs ɛs tə saɪs əf də drɔps ɪnkris‖

ADDED CHICANO DIALECTAL SYMBOLS:

/í/ is between /i/ and /ɪ/

/ɛ́/ is between /e/ and /ɛ/

/ʊ́/ is between /u/ and /ʊ/

/ɔ́/ is between /o/ and /ɔ/